

installation guide

# HP StorageWorks Replication Solutions Manager

**Product Version:** 1.0

First Edition (December 2004)

**Part Number:** AA-RW1AA-TE

This guide describes the process and procedures for installing, updating, and removing HP StorageWorks Replication Solutions Manager, an interface for HP StorageWorks Continuous Access EVA 2.0.



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Replication Solutions Manager Installation Guide  
First Edition (December 2004)  
Part Number: AA-RW1AA-TE

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## About this guide

This guide describes procedures for installing, updating, and removing HP StorageWorks Replication Solutions Manager (hereafter called the replication manager). The replication manager provides a graphical user interface (GUI) that replaces previous HP StorageWorks Continuous Access EVA user interfaces and provides limited HP StorageWorks Business Copy EVA functionality. To use the replication manager, you need licenses for one or both of the latter products. For more information, see the HP Business Copy EVA product web site: <http://h18000.www1.hp.com/products/storage/software/bizcopyeva/index.html> and the HP Continuous Access EVA product web site: <http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html>.

This guide provides information to help you:

- Prepare to install the replication manager
- Install and remove the replication manager
- Verify a successful installation
- Troubleshoot replication manager issues
- Contact technical support for additional assistance

## Overview

### Intended audience

This guide is intended for use by customers and HP-authorized service providers who are installing or removing the replication manager. Readers should also be knowledgeable of the following:

- SAN fabric configurations
- Host operating systems intended for replication manager use
- HP StorageWorks Enterprise Virtual Array (EVA)
- HP StorageWorks Command View EVA
- HP OpenView Storage Management Appliance (SMA), if used
- HP OpenView Storage Area Manager, if used

### Prerequisites

Before installing software, see the following documents:

- General information—*HP StorageWorks Continuous Access EVA overview*
- Configuration information—*HP StorageWorks EVA replication compatibility reference*
- Planning information—*HP StorageWorks Continuous Access EVA planning guide*
- Last-minute changes:
  - *HP StorageWorks Replication Solutions Manager release notes*
  - *HP StorageWorks Continuous Access EVA 2.0 release notes*

These and other HP documents can be found on the following HP web site:

<http://www.docs.hp.com>.

## Document conventions

Table 1: Document conventions

Convention	Element
Blue text: <a href="#">Figure 1</a>	Cross-reference links and e-mail addresses
Blue, underlined text: <a href="http://www.hp.com">http://www.hp.com</a>	Web site addresses
<b>Bold font</b>	GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes.
<i>Italics font</i>	Text emphasis
Monospace font	<ul style="list-style-type: none"> <li>■ File and directory names</li> <li>■ System output</li> <li>■ Code</li> <li>■ Text typed at the command-line</li> </ul>
<i>Monospace, italic font</i>	<ul style="list-style-type: none"> <li>■ Code variables</li> <li>■ Command-line variables</li> </ul>
<b>Monospace, bold font</b>	Emphasis of file and directory names, system output, code, and text typed at the command-line



**Caution:** Indicates that failure to follow directions could result in damage to equipment or data.

**Tip:** Provides helpful hints and shortcuts.

**Note:** Provides additional information.

## Getting help

### HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site:  
<http://www.hp.com/support/>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign up online using the subscriber's choice web site:  
<http://www.hp.com/go/e-updates>.

- Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

### HP storage web site

The HP web site has the latest information on this product as well as the latest drivers. Access storage from <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this web site, select the appropriate product or solution.

### HP authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-345-1518.
- Elsewhere, visit <http://www.hp.com> and click **Contact HP** to find locations and telephone numbers.

### Helpful web sites

For third-party product information, see the following vendor web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- <http://www.hp.com/support>
- <http://www.docs.hp.com>

# Preparation

## 1

This chapter provides preparation information for installing the replication manager.

Install the replication manager on the same server where HP Command View EVA resides. This server can be an HP OpenView Storage Management Appliance (SMA), a general purpose server, or a server dedicated solely to EVA management software. A general purpose server runs customer applications, such as Microsoft® Exchange.



**Caution:** Do not install the replication manager before reviewing configuration requirements. Installing the replication manager in an unsupported configuration can cause malfunctions. See *HP StorageWorks EVA replication compatibility reference* for configuration information and *HP StorageWorks Continuous Access EVA planning guide* for HP Continuous Access EVA planning.

These documents are available on the HP Continuous Access EVA product web site:  
<http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html>.

**Note:** Do not use the replication manager as a replacement for existing HP Business Copy EVA implementations. The replication manager provides limited HP Business Copy EVA functionality.

## Requirements and recommendations

### Installation preparations

Before installing the replication manager, consider the following:

- The replication manager requires approximately 109.3 MB of space for an initial installation and approximately 10 MB for *each* managed array.
- A replication manager host agent requires approximately 29.6 MB of space for an initial installation.
- Remove any installed version of HP Continuous Access EVA User Interface at local and remote sites.
- Install or upgrade HP Command View EVA to a supported version.
- Place all replication manager server or host agent files (executable and JAR files) in a single directory before initiating the installation.
- The replication manager *cannot* be installed on a server where HP StorageWorks Command View SDM resides.
- Install the replication manager on the same server as HP Command View EVA.



**Caution:** The replication manager uses the HP Command View EVA service (called "nasServer") to access arrays. Make sure this service remains running at all times. Also, never stop the "HP OpenView SAM HostAgent" or "HP OV-SAM ManagementServer" services. These services halt all replication manager operations and jobs and can cause a loss of data if not properly coordinated.

---

### Installation requirements

- You need the IP address of at least one client to install the replication manager. If the management server does not contain HP OpenView Storage Area Manager, you also need the server's IP address. You can add IP addresses for additional clients after installation.
- When installing over a network, always use one of the following to install the replication manager and enable reinstallation and removal in the future.
  - For Windows, use Terminal Services and the Add/Remove Programs feature.
  - For UNIX® hosts, use Telnet.
- For management server configurations:
  - For SMAs, the SMA software must be a supported version.
  - The HP Storage Area Manager must be a supported version and installed in the default installation directory.
  - For new environments that include HP Storage Area Manager:
    - Install the replication manager after installing HP Storage Area Manager and HP Command View EVA, respectively.
    - For existing servers with HP Command View EVA, HP Business Copy EVA, and the replication manager installed, remove this software from the server and hosts before installing HP Storage Area Manager, and then reinstall HP Command View EVA, HP Business Copy EVA, and the replication manager.

- Using HP Storage Area Manager, deploy replication manager host agents to the specific hosts.
- For existing environments that include HP Storage Area Manager:
  - Install or upgrade HP Command View EVA to a supported version and then install the replication manager.
  - Using HP Storage Area Manager, deploy replication manager host agents to the specific hosts.

## Operational requirements

Consider the following replication manager operational requirements:

- HP recommends allocating an additional 300-400 MB to account for log and replication manager database growth.
- Only one instance of the replication manager can manage each array at the local and remote sites.
- Do not run replication manager jobs concurrently with HP Business Copy EVA jobs that access the same arrays. The simultaneous detection of the replication manager and HP Business Copy EVA jobs causes a conflict that immediately halts these jobs.
- Install a supported Java™ Runtime Environment (JRE) on any computer used to browse to the server. See “[Recommendations](#)” on page 13.
- All replication manager jobs must be stopped before installing any application that may require a server restart or that stops or restarts the HP Command View EVA service (nasServer).

## Recommendations

- Install the JREserver package immediately after installing the replication manager to facilitate obtaining the preferred JRE for browsing to the replication manager interface. A supported JRE is required on the browser client. See the *HP StorageWorks JREserver installation guide* for details.
- For failover configurations, HP recommends installing the replication manager on the same server type (that is, a dedicated or general purpose server) at the local site and the remote site.

## HP Continuous Access EVA migration

Migrating to the replication manager involves the following tasks:

1. Exporting the current HP Continuous Access EVA user interface (HP CA-UI) configuration (database). HP recommends exporting to a network share that is accessible by the management server for easy installation. Complete this task using current HP Continuous Access EVA version documentation.
2. Removing HP CA-UI software from the environment. Complete this task using current HP Continuous Access EVA version documentation.

---

**Note:** Previous HP Continuous Access EVA user interfaces are not compatible with the replication manager. Also, all HP Continuous Access EVA scripts (jobs) must be recreated using the replication manager interface and tested.

---

3. Installing replication manager software. See “[Installing HP Replication Solutions Manager](#)” on page 19.
4. Copying the previous HP CA-UI configuration (database) to the local server where the replication manager resides.
5. Using the replication manager to import the HP CA-UI configuration (database). Complete this task using the *HP StorageWorks Continuous Access EVA administrator guide*.
6. Performing “[Saving the replication manager configuration \(database\)](#)” on page 17.
7. Creating the same configuration on each management server for disaster tolerance. See *HP StorageWorks Continuous Access EVA administrator guide*.

## Obtaining replication manager online

### Downloading software or updates

The replication manager is available by download from the HP Continuous Access EVA product web site.

1. Visit the HP Continuous Access EVA product web site:  
<http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html>.
2. Select **software and drivers**.
3. Download **Replication Solutions Manager 1.0**.

### Creating a CD-ROM

After downloading the file, HP recommends backing up the downloaded and extracted files to CD-ROMs, which can then be used to install the replication manager.

HP recommends making the following CD-ROMs.

- One for archival
- One to keep with the management server
- One or more to retain with hosts that contain the replication manager host agent
- One or more for other installations

To make a CD-ROM backup:

1. Extract the individual files from the download file.
2. Create a CD-ROM containing the downloaded and extracted files.

Burn the installation file at the root level of the CD-ROM using your preferred CD creation software.

To use the CD-ROM for installation, place it in the CD drive. The replication manager is now positioned for installation.

## Coordinating installation activities

Before installing or updating the replication manager, ensure that:

- Replication manager installation activities have been coordinated with other management server and host users to prevent a disruption in server and host activities.
- No replication manager jobs are running or “undoing” or are scheduled to run or “undo” during installation.



**Caution:** If not properly planned and coordinated, installing or updating the replication manager can result in reduced operational capabilities and failure of replication manager jobs.

---

When ready, go to the next section.

## Saving the replication manager configuration (database)

HP recommends saving (exporting) the replication manager database whenever the configuration changes or on a periodic schedule; for example, after:

- Completing the first replication manager installation to establish an initial record
- Adding, modifying, or deleting replication manager jobs
- Installing replication manager host agents on a new host
- Removing a replication manager host agent from a host
- Reinstalling or updating the replication manager

See *HP StorageWorks Continuous Access EVA administrator guide* for the save (export) procedure and additional information.

When ready, go to “[Installing HP Replication Solutions Manager](#)” on page 19.



# Installing HP Replication Solutions Manager

## 2

Use the procedures in this chapter to install, reinstall, or update the replication manager on a management server and storage hosts. This chapter assumes that “[Installation preparations](#)” on page 12 has been read and all requirements met.

---

**Note:** The installation program exits without completion:

- If a supported version of HP Command View EVA is not installed or not running on the management server
  - If HP Storage Area Manager is installed in a location other than the default directory (C:\Program Files\Hewlett-Packard\sanmgr) on the management server. Reinstall HP Storage Area Manager in the default directory to install the replication manager.
  - If HP Continuous Access EVA User Interface is installed on the management server.
  - If the replication manager cannot locate HP Command View EVA on the server, the installation aborts.
- 

Reinstallations are nearly identical to initial installations. During reinstallations and updates, screen content may change slightly and a server restart may be required.

---

**Note:** Total size is considerably smaller for reinstallations (approximately 30.8 MB).

---

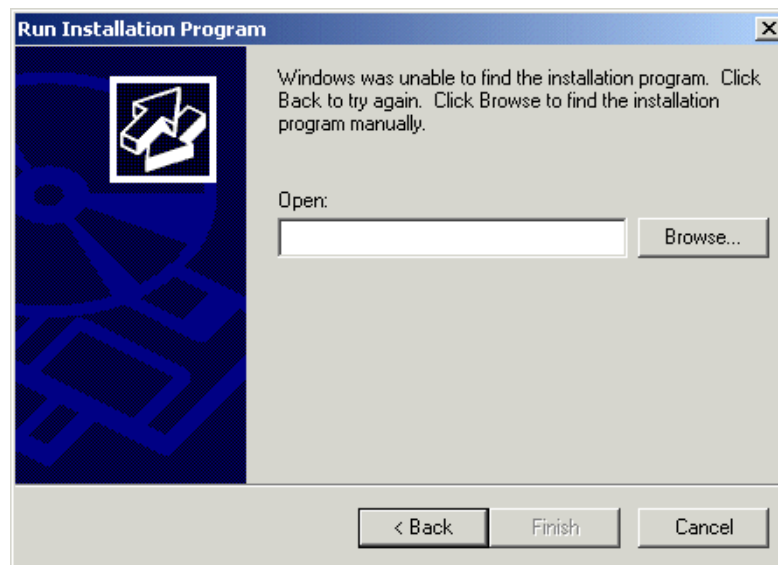
See “[Troubleshooting](#)” on page 65 for replication manager troubleshooting information.

## Using Terminal Services for remote installation

When the server or Windows host is not-local (for example, at a remote site), Terminal Services must be used to install the replication manager server or Windows host agent. Installation over a network without Terminal Services is not supported and creates installation errors.

Complete the following procedure to use Terminal Services for installing the replication manager:

1. Position the software on the management server or host where it will be installed from.  
The software may be on a CD-ROM in the CD drive or copied to the computer.
2. Open Terminal Services and access the server or host on which the installation is desired.
3. Open **Control Panel**.
4. Double-click **Add/Remove Programs**.
5. Click **Add New Programs**.
6. Click **CD or Floppy**.
7. Click **Next**.



**Figure 1: Run installation programs window**

8. Click **Browse** and navigate to the replication manager executable (server or OS-specific host agent file).

Continue the installation for either the replication manager server (see [“Installing the replication manager server software”](#) on page 21) or Windows host agent ([“Manually installing the replication manager host agents”](#) on page 33) procedure.

## Installing the replication manager server software

Installation requires one of the following:

- Copying the replication manager server software (an executable file and three JAR files) to the management server
- Running the installation from a replication manager CD-ROM placed in the management server CD drive

Install the replication manager server software on a management server using one of the following methods:

- [“GUI procedure”](#) on page 21
- [“Command-line procedure”](#) on page 28

---

**Note:** Install the replication manager on the SMA like any other Windows application. Use Add/Remove Programs, not the SMA software interface.

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---

**Tip:** The installation process requires entering two IP addresses: one for the management server (when HP Storage Area Manager is not installed) and one for a browser client.

---

### GUI procedure

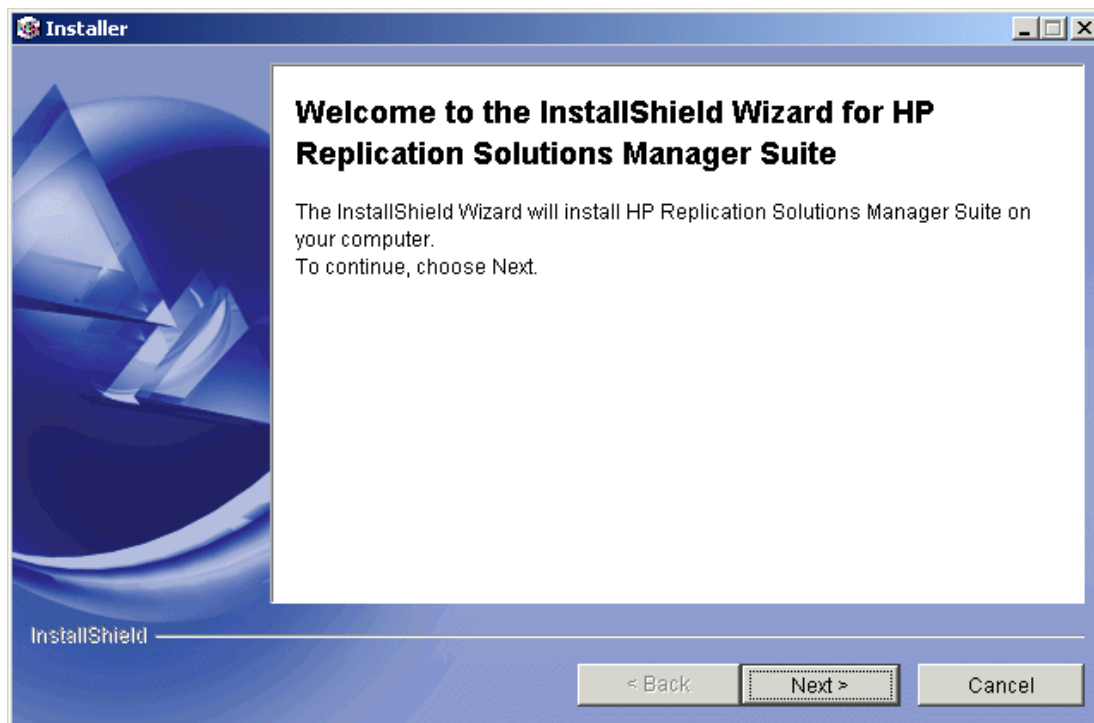
---

**Note:** To install the replication manager remotely, always use Terminal Services (see [“Using Terminal Services for remote installation”](#) on page 20).

---

1. HP recommends closing active applications on the management server.
  - a. Close all browser windows, Microsoft Management Console (MMC) sessions, and Java applets that are open to and on the management server.
  - b. Close any HP Storage Area Manager application performing management tasks.
2. Navigate to the replication manager `setupRSMWin32.exe` file.
3. Double-click the `setupRSMWin32.exe` file to initiate the installation.

A replication manager splash screen briefly appears followed by a welcome window.



**Figure 2: Replication manager suite introduction**

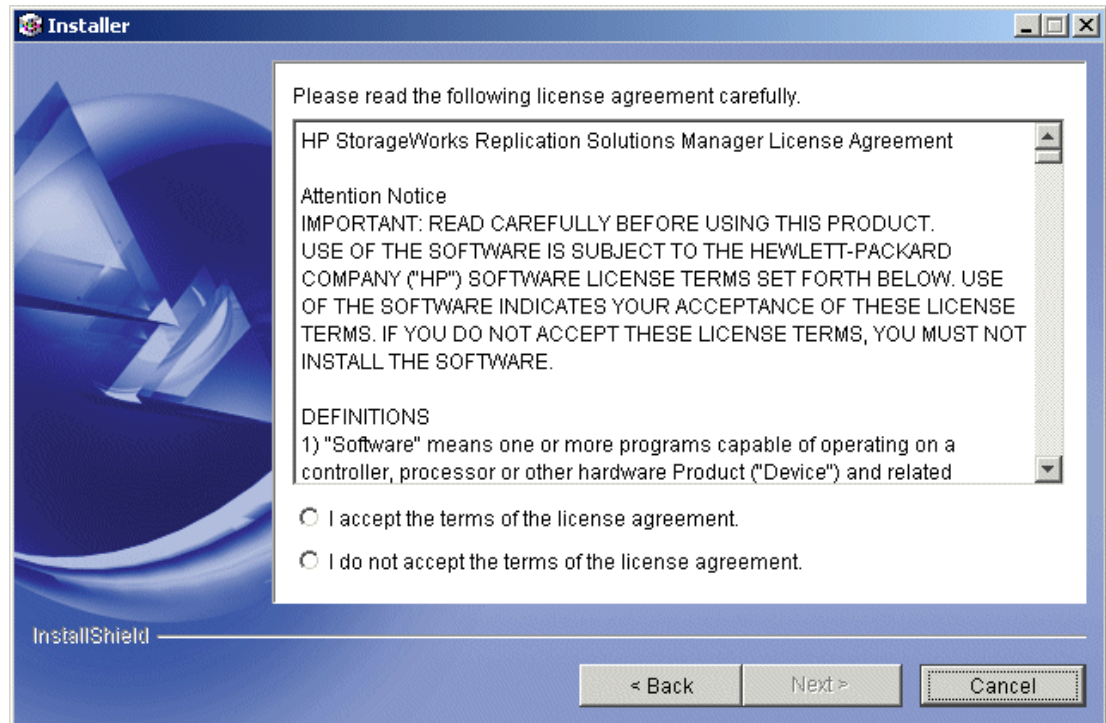
---

**Note:** Click **Cancel** at any time to exit the installation.

---

4. Click **Next**.

If a supported version of HP Command View EVA is not installed, a pop-up window appears that identifies this requirement before exiting the installation; otherwise, the installation continues by displaying the license agreement.



**Figure 3: License agreement**

5. Carefully review the license agreement before continuing.

To continue the installation, the terms of the agreement must be accepted.

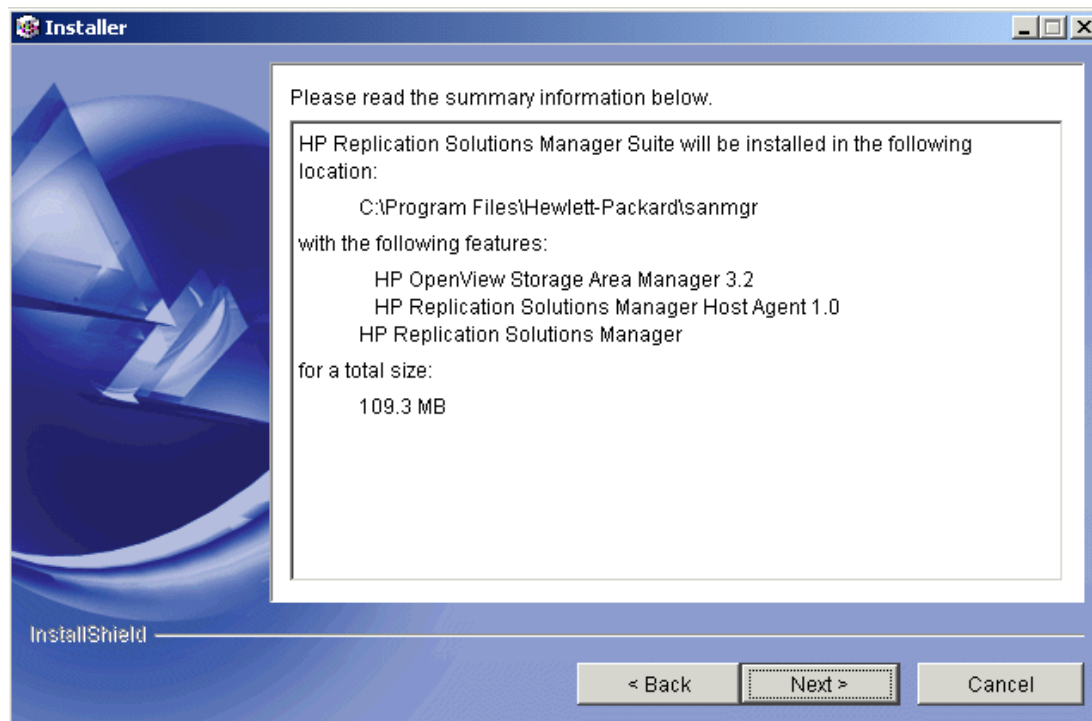
6. Select **I accept the terms of the license agreement** to continue.

7. Click **Next**. An installation summary appears.

---

**Note:** Replication manager server software always installs under C:\Program Files \Hewlett-Packard\sanmgr. No user-defined installation directory capability is provided.

---



**Figure 4: Summary information**

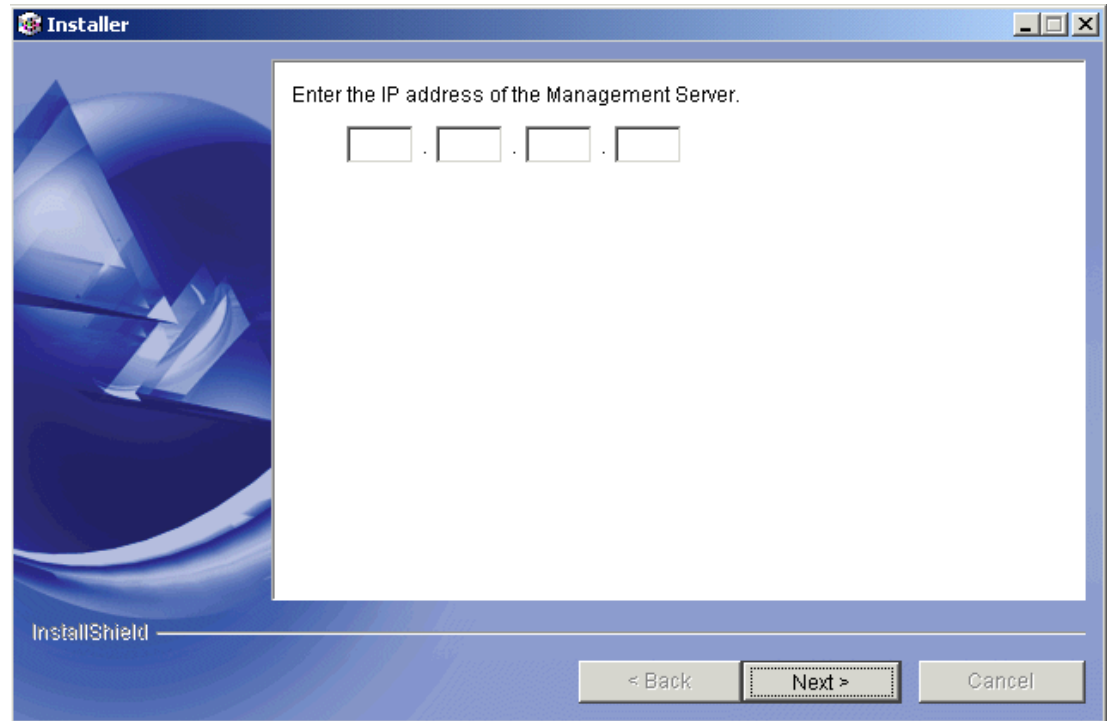
8. Click **Next** to initiate the installation.

An installation status bar briefly appears as the software installs.

During reinstallations, the installation program stops any HP Storage Area Manager services.

When the installation completes:

- On management servers where HP Storage Area Manager is installed, the program requests a client IP address. Go to [step 12](#).
- On management servers without HP Storage Area Manager, the program requests the IP address for the management server. Continue with [step 9](#).



**Figure 5: IP address of the server**

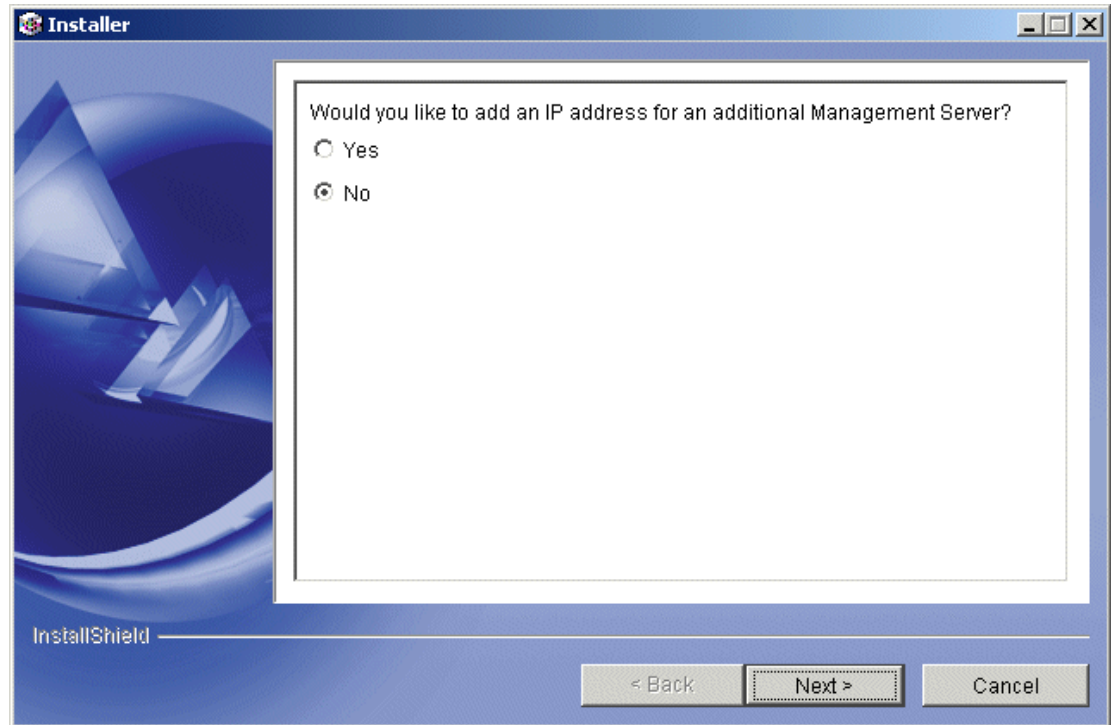
9. Enter the IP address for this server where the replication manager is being installed.  
The installation cannot continue until a valid IP address is entered.

---

**Tip:** If a wrong IP address is entered, add the correct IP address as an additional IP address. Then remove the wrong IP address from the access list using [“Adding remote access IP addresses”](#) on page 47.

---

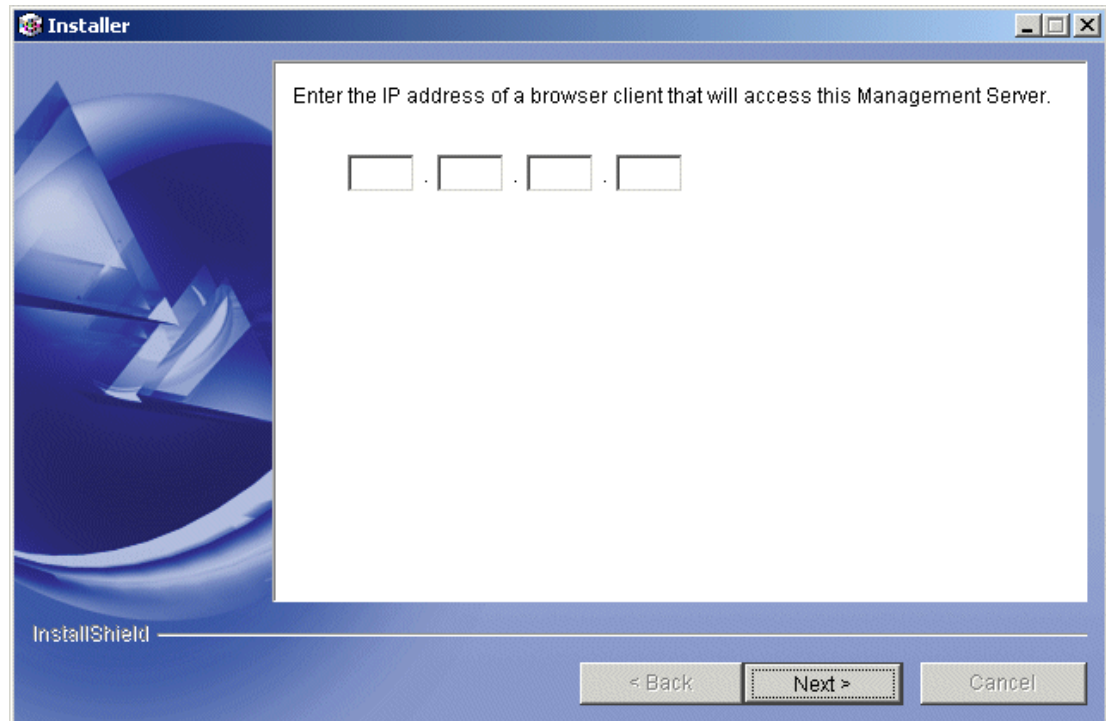
10. Click **Next**. The program requests the IP address of another management server.  
Consider entering the IP address for the remote site failover server. If this IP address is not currently known, add the address after completing the installation using [“Adding remote access IP addresses”](#) on page 47.  
For reinstallations, any new IP address entered here is added to the existing list.



**Figure 6: Add another remote access IP address question**

11. Answer the question.

- Selecting **Yes** displays the previous page for entering IP addresses. Enter the IP address for the remote site failover server.
- Selecting **No** continues the installation by displaying another page requesting an IP address of a browser client.



**Figure 7: Enter browser client IP address**

12. Enter the IP address of any computer that needs access to the replication manager.

At least one browser client IP address is required to continue. If a browser client will not be used to access the replication manager, enter the management server IP address here as well.

---

**Tip:** If a wrong IP address is entered, add the correct IP address as an additional IP address. Then remove the wrong IP address from the access list using [“Adding remote access IP addresses”](#) on page 47.

---

For reinstallations, any new IP address entered here is added to the existing list.

13. Click **Next**. The program asks if additional IP addresses should be added for remote access to this replication manager.

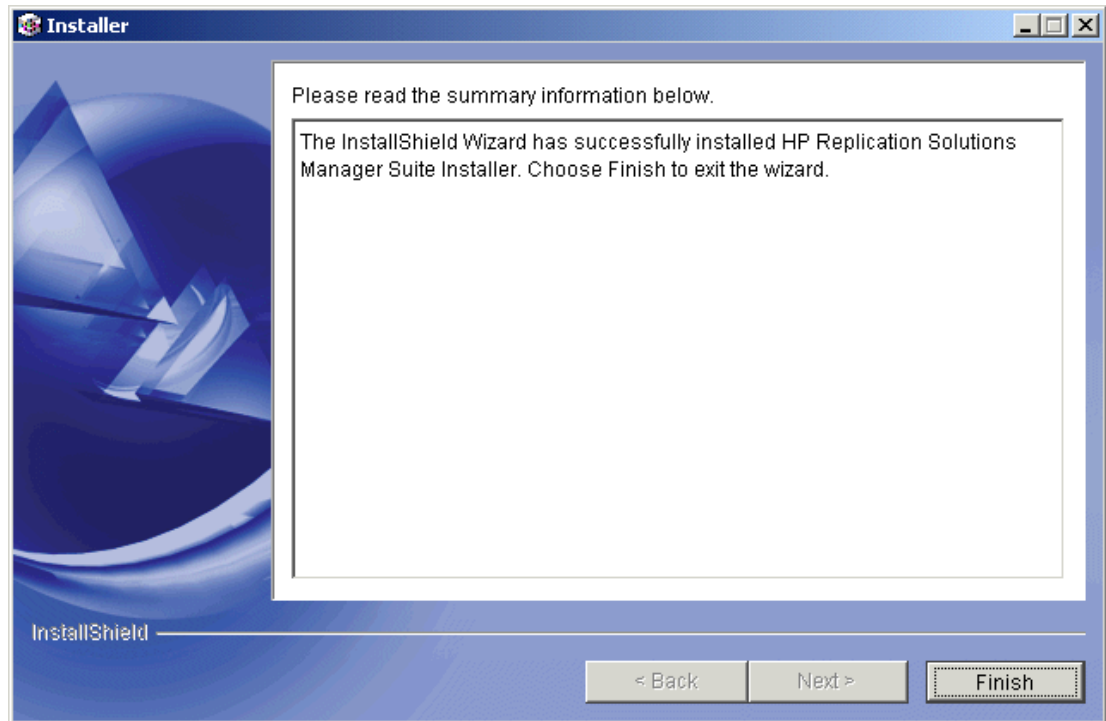
14. Answer the question.

- Selecting **Yes** displays the previous page for entering additional IP addresses. Repeat this sequence until all IP addresses for browser clients are entered.
- Selecting **No** continues the installation by displaying an informational page for adding more remote IP addresses at a later date.

See [“Adding remote access IP addresses”](#) on page 47.

15. Click **Next** on the information page.

During reinstallations or updates, the program may request a restart. In this case, restart the computer to finalize the installation.



**Figure 8: Installation complete**

16. Click **Finish** to start replication services and exit the installation.

The replication manager icon  appears on the desktop.

See the following sections for other procedures:

- [“Verifying installation”](#) on page 44
- [“Adding remote access IP addresses”](#) on page 47
- [“Using HP Storage Area Manager to deploy host agents”](#) on page 59
- [“Configuring Windows systems with Multiple NICs”](#) on page 48
- [“Saving the replication manager configuration \(database\)”](#) on page 17

## Command-line procedure

---

**Note:** To install the replication manager remotely, always use Terminal Services (see [“Using Terminal Services for remote installation”](#) on page 20).

---

1. HP recommends closing active applications on the management server.
  - a. Close all browser windows, Microsoft Management Console (MMC) sessions, and Java applets that are open to and on the management server.
  - b. Close any HP Storage Area Manager application performing management tasks.
2. Open a DOS window.
3. Navigate to the directory containing the `setupRSMWin32.exe` file.
4. Initiate the installation using one of the following:

- Enter `setupRSMWin32.exe` to continue with the GUI installation at [step 4](#) on page 22.
- Enter `setupRSMWin32.exe -console` to continue with this procedure.

```
-----
Welcome to the InstallShield Wizard for HP Replication Solutions Manager
Suite.

The InstallShield Wizard will install HP Replication Solutions Manager
Suite on your computer.

To continue, choose Next.

Press 1 for Next, 3 to Cancel or 4 to Redisplay [1]
```

5. Enter 1 to display the license agreement.

```
-----
Please read the following license agreement carefully.

HP StorageWorks Replication Solutions Manager License Agreement

Attention Notice
IMPORTANT: READ CAREFULLY BEFORE USING THIS PRODUCT.
.
.
.

Please choose from the following options:
[ ] 1 - I accept the terms of the license agreement.
[ ] 2 - I do not accept the terms of the license agreement.

To select an item enter its number, or 0 when you are finished: [0]
```

6. Read the license agreement and choose an option:
  - Enter 1 to accept the license agreement and continue the installation.  
A confirmation message appears.
  - Enter 2 to reject the license agreement and follow the prompts to exit the installation.
7. Enter 0.

---

**Note:** When options are offered, enter "0" to exit the loop and continue the installation.

---

8. Enter 1.

```
-----
HP Replication Solutions Manager Suite Installer will be installed in
the following location:

C:\Program Files\Hewlett-Packard\sanmgr

with the following features:

HP OpenView Storage Area Manager 3.2
HP Replication Solutions Manager Host Agent 1.0
HP Replication Solutions Manager

for a total size:

109.3 MB

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

9. Enter 1.

During reinstallations, the replication manager stops any HP Storage Area Manager services if currently running. Also, if replication manager files exist on this computer that are newer than the replication manager installation files, HP recommends that you *do not* replace these files.

When the installation completes:

- On management servers where HP Storage Area Manager is installed, the program requests a client IP address.
- On management servers without HP Storage Area Manager, the program requests the IP address for the management server. Continue with [step 10](#).

```
Installing HP Replication Solutions Manager Host Agent 1.0. Please
wait...
```

```
|-----|-----|-----|-----|
0%          25%          50%          75%          100%
||||||||||||||||||||||||||||||||||||||||
```

```
Creating uninstaller...
```

```
Installing HP Replication Solutions Manager. Please wait...
```

```
Creating uninstaller...
```

```
-----
Enter the IP address of the Management Server.
```

**Enter IP:**

10. Enter the IP address for the local server where HP Command View EVA is installed.

The installation cannot continue until an IP address is entered.

**Tip:** If a wrong IP address is entered, add the correct IP address as an additional IP address. Then remove the wrong IP address from the access list using [“Adding remote access IP addresses”](#) on page 47.

For reinstallations, any new IP address entered here is added to the existing list.

11. Enter 1.

```
-----
Would you like to add an IP address for an additional Management Server?
```

```
[ ] 1 - Yes
```

```
[X] 2 - No
```

```
To select an item enter its number, or 0 when you are finished: [0]
```

Consider the following:

- Use 1 to add another management server IP address.

HP recommends entering the IP address for the remote site failover server. If this IP address is not currently known, add the address after completing the installation using [“Adding remote access IP addresses”](#) on page 47.

- Use 2 to continue the installation.

12. Enter 1 to add another server IP address.

Enter the IP address for the remote site failover server.

13. Enter 0.

14. Enter the IP address.

Repeat [step 12](#) through [step 14](#) until all IP addresses are entered.

15. Enter 1.

16. Enter 2 to stop entering more IP addresses.

17. Enter 0.

```
-----
Enter the IP address of a browser client that will access this
Management Server.
```

**Enter IP:**

At least one browser client IP address is required to continue. If a browser client will not be used to access the replication manager, enter the server IP address here as well.

---

**Tip:** If a wrong IP address is entered, add the correct IP address as an additional IP address. Then remove the wrong IP address from the access list using [“Adding remote access IP addresses”](#) on page 47.

---

For reinstallations, any new IP address entered here is added to the existing list.

18. Enter the IP address of any computer that needs access to the replication manager.

19. Enter 1.

```
-----
Would you like to add the IP address for another browser client?
[ ] 1 - Yes
[X] 2 - No
```

**To select an item enter its number, or 0 when you are finished: [0]**

Consider the following:

- Use 1 to add another browser client IP address.

HP recommends entering all browser client IP addresses at this time. If an IP address is not currently known, add the address after completing the installation using [“Adding remote access IP addresses”](#) on page 47.

- Use 2 to continue the installation.

20. Enter 1 to add another browser client IP address.

21. Enter 0.

22. Enter the browser client IP address.

Repeat [step 20](#) through [step 22](#) until all IP addresses are entered.

23. Enter 2 to stop entering IP addresses.

24. Enter 1.

```
-----  
Please read the information below.  
You can add additional IP addresses at a later time.  
Please refer to your Installation Guide for additional information.  
Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

See [“Adding remote access IP addresses”](#) on page 47.

25. Enter 1.

The replication manager starts HP Storage Area Manager services.

```
Starting the <HP Storage Area Manager service name> service. This may  
take a few moments.  
  
-----  
The InstallShield Wizard has successfully installed HP Replication  
Solutions Manager Suite Installer. Choose Next to continue the wizard.  
Press 3 to Finish or 4 to Redisplay [3]
```

During reinstallations or updates, the program may request a restart. In this case, restart the computer to finalize the installation.

26. Enter 3 to end the installation.

See the following sections for other procedures:

- [“Verifying installation”](#) on page 44
- [“Adding remote access IP addresses”](#) on page 47
- [“Using HP Storage Area Manager to deploy host agents”](#) on page 59
- [“Configuring Windows systems with Multiple NICs”](#) on page 48
- [“Saving the replication manager configuration \(database\)”](#) on page 17

## Manually installing the replication manager host agents

A manual installation requires one of the following:

- Copying replication manager host agent software (an executable file and a JAR file) to the host
- Running the installation from a replication manager CD-ROM located in the local CD drive

The executable file for initiating the installation depends on the host operating system, but the installation process is nearly identical for all supported operating systems.

The procedures in this section describe how to install replication manager host agents *without* using HP Storage Area Manager.

---

**Note:** When using HP Storage Area Manager, *do not* manually install replication manager host agents on a host. Instead, deploy all replication manager host agents from the management server.

---



---

**Note:** When using an HP OpenView Storage Area Manager management server to deploy the HP Replication Solutions Manager host agent to a Windows host, the Windows host must have its boot partition installed on the `C:\` drive.

---

Install replication manager host agent software using one of the following methods:

- [GUI procedure](#), page 33
- [Command-line procedure](#), page 40

### GUI procedure

1. If installing a host agent over a network, use Terminal Services (see “[Using Terminal Services for remote installation](#)” on page 20) or Telnet to access the host and log in.
2. Navigate to the replication manager host agent executable file for this host operating system.

Executable file names:

- `setupwin32.exe` for Windows
- `setupHP11.bin` for HP-UX 11.11 (11i v1)
- `setupHP1A64.bin` for HP-UX 11.23PI (11i v2)
- `setupLinux.sh` for Linux
- `setupSolaris.bin` for Solaris

3. Double-click the file to initiate the installation.

A replication manager splash screen briefly appears followed by a welcome window.



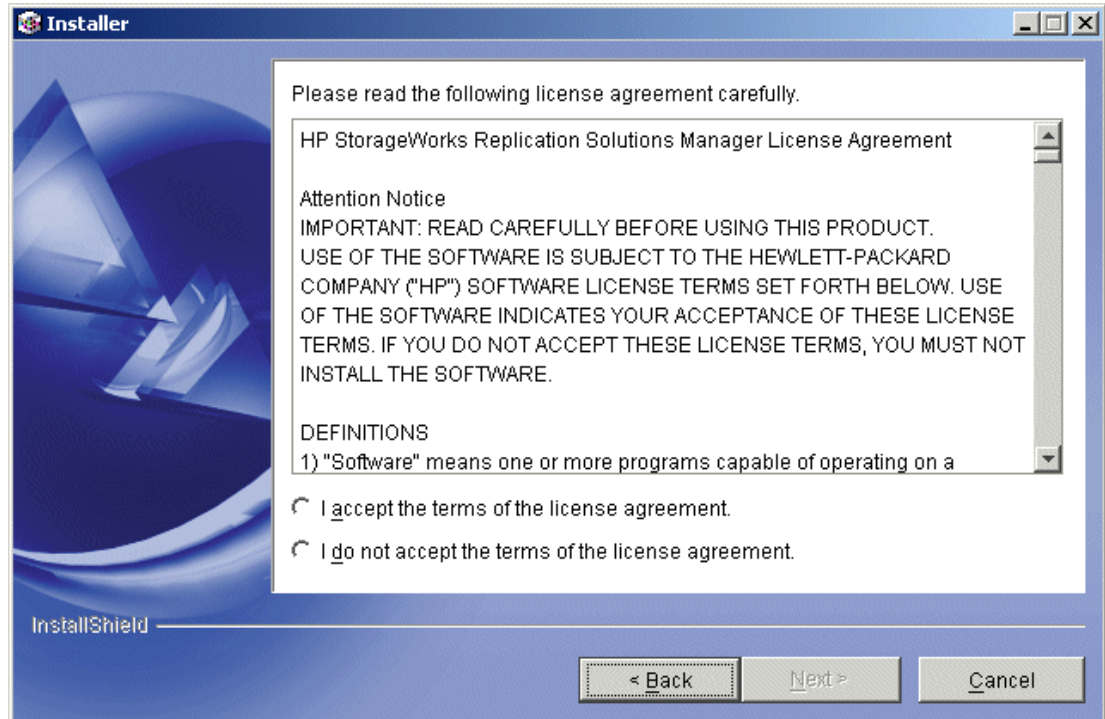
**Figure 9: Replication manager host agent introduction**

---

**Note:** Click **Cancel** at any time to exit the installation.

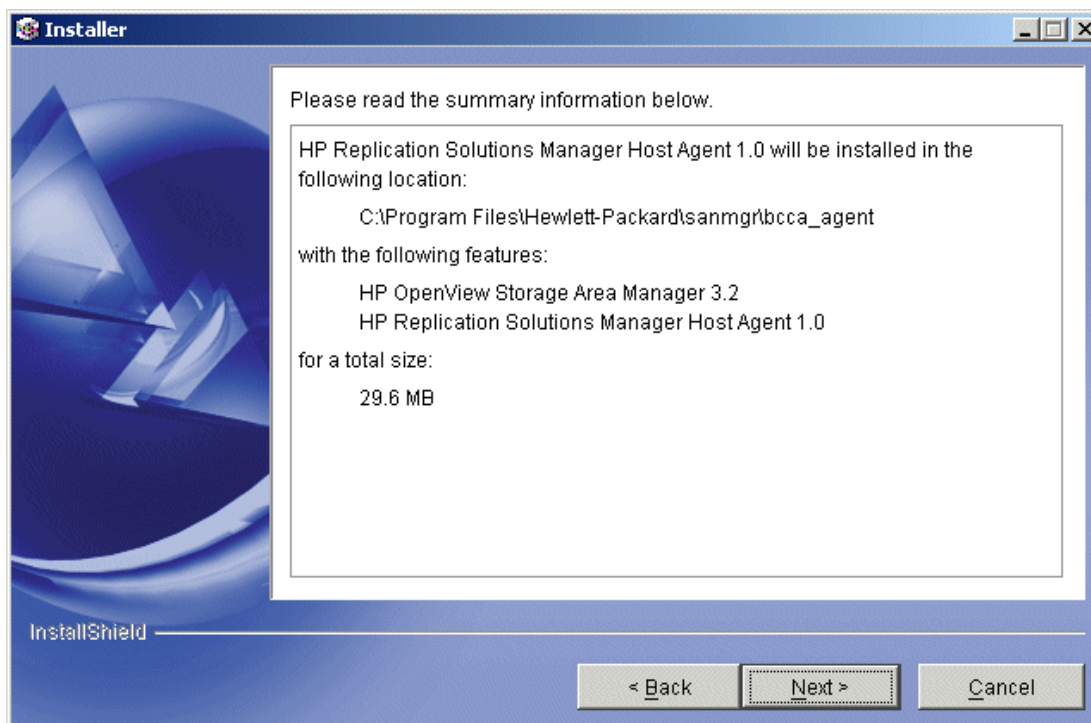
---

4. Click **Next** to display the license agreement.



**Figure 10: License agreement**

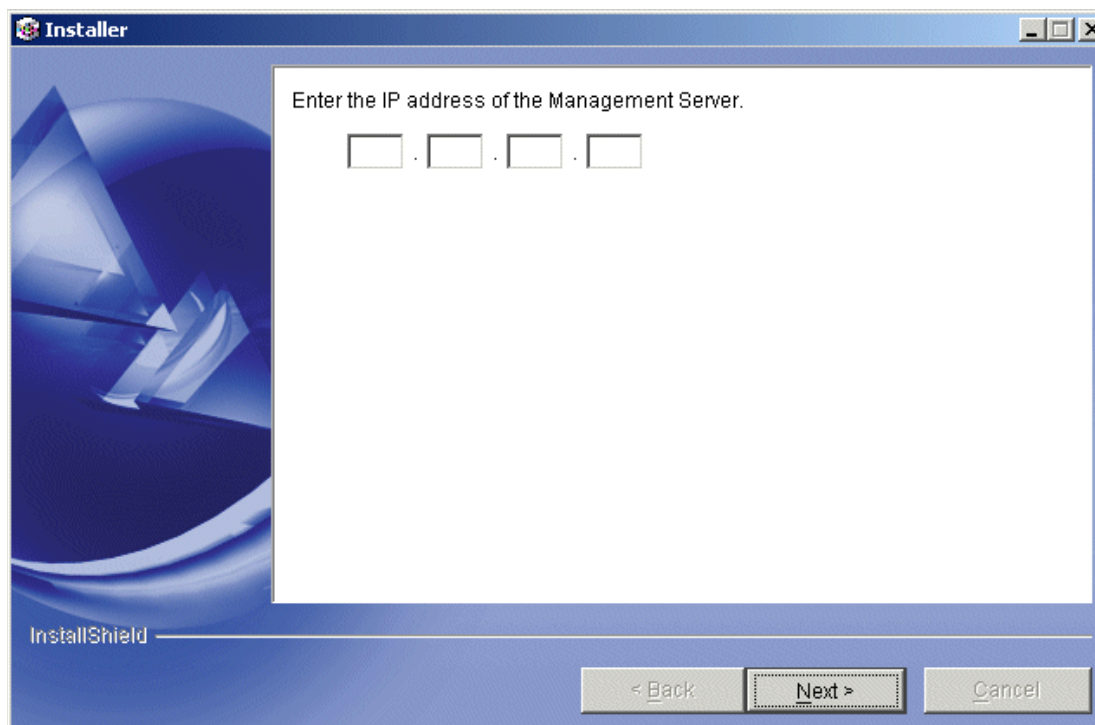
5. Carefully review the license agreement before continuing.  
To continue installing the replication manager, the terms in the agreement must be accepted.
6. Select **I accept the terms of the license agreement** to continue the installation.
7. Click **Next** to display summary information.



**Figure 11: Summary information**

8. Click **Next** to initiate the installation.

An installation status bar briefly appears as the software installs. When the installation completes, the IP address for the management server is requested.



**Figure 12: IP address of the server**

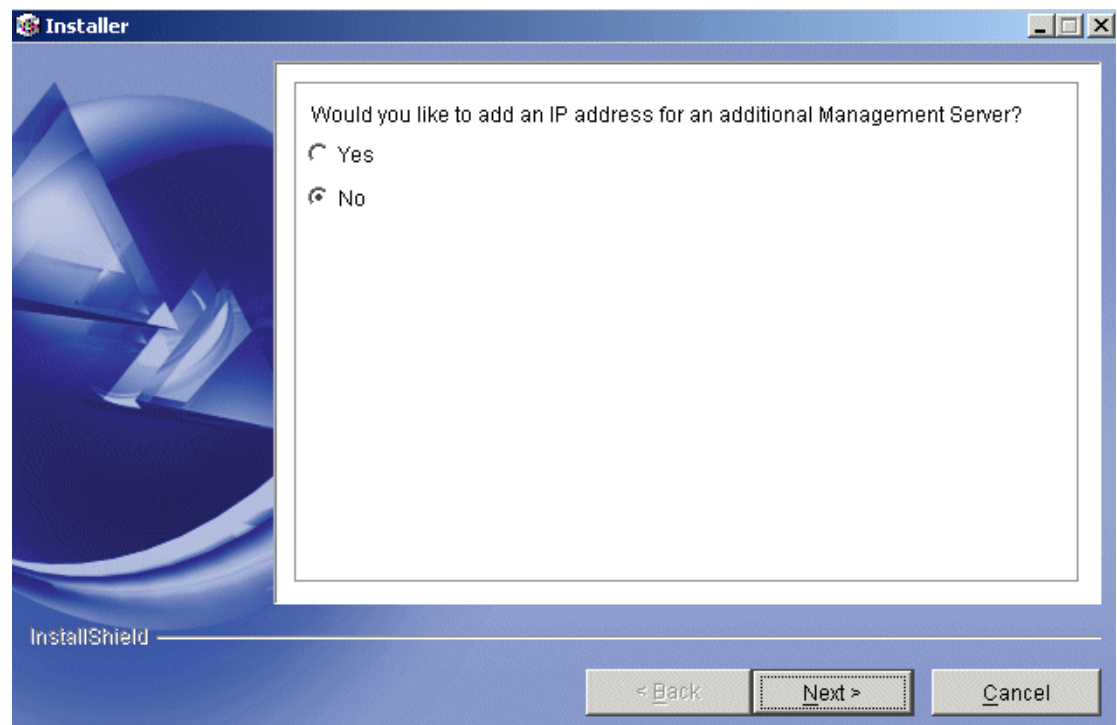
9. Enter the IP address for the local server where the replication manager server is installed.  
The installation cannot continue until an IP address is entered.

**Tip:** If a wrong IP address is entered, add the correct IP address as an additional IP address. Then remove the wrong IP address from the access list using [“Adding remote access IP addresses”](#) on page 47.

10. Click **Next**. The program requests additional IP address.

Enter the IP address for the remote site failover server. If this IP address is not currently known, add the address after completing the installation using [“Adding remote access IP addresses”](#) on page 47.

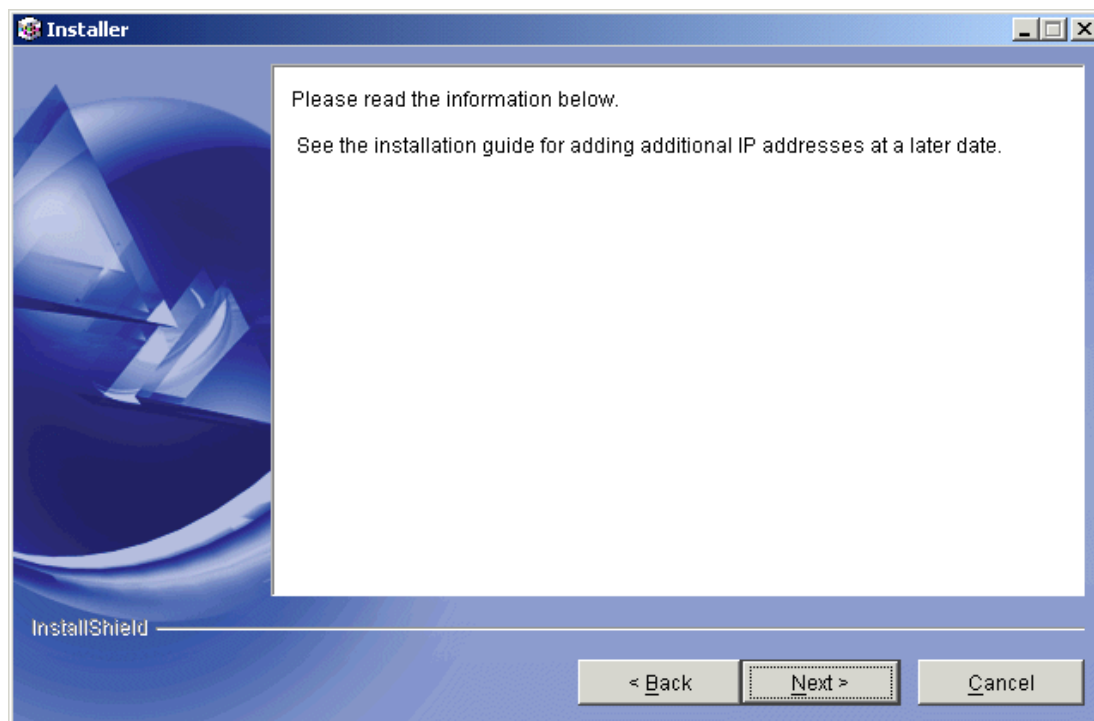
For reinstallations, any new IP address entered here is added to the existing list.



**Figure 13: Add more remote access IP addresses question**

11. Answer the question.

- Selecting **Yes** displays the previous page for entering IP addresses. Enter the IP address for the remote site failover server.
- Selecting **No** continues the installation by displaying another page requesting an IP address of a browser client.

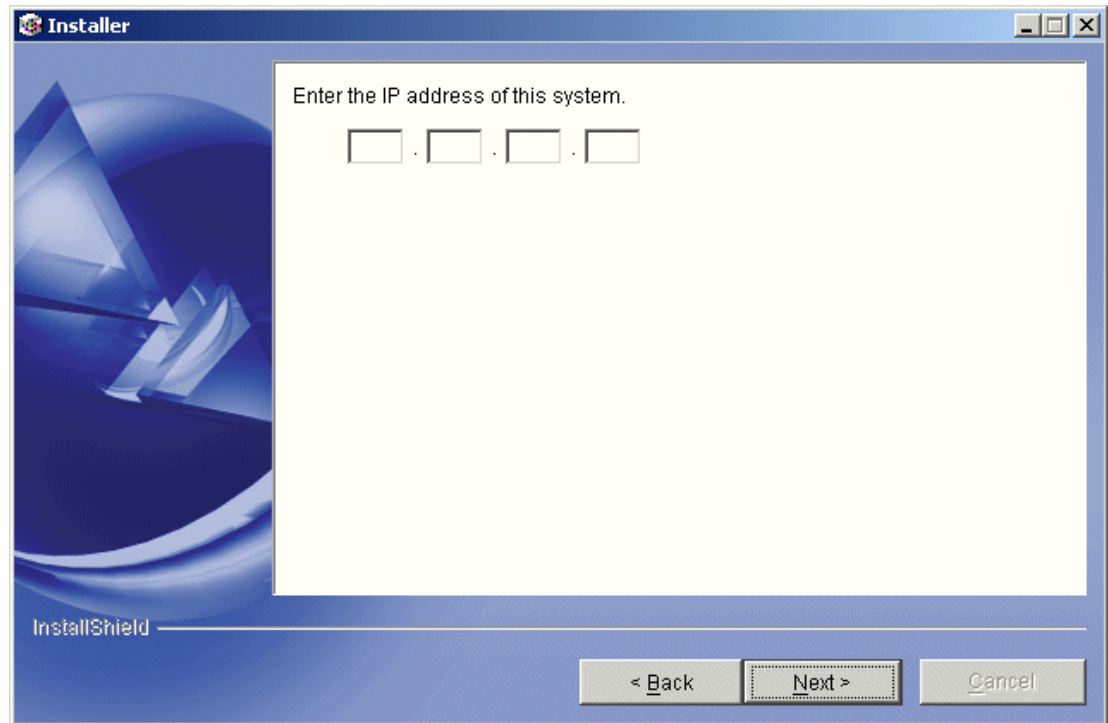


**Figure 14: Adding remote access IP addresses at a later date**

12. Click **Next**.

For Windows hosts—The final page appears. During reinstallations or updates, the program may request a restart to finalize the installation. Go to [step 15](#).

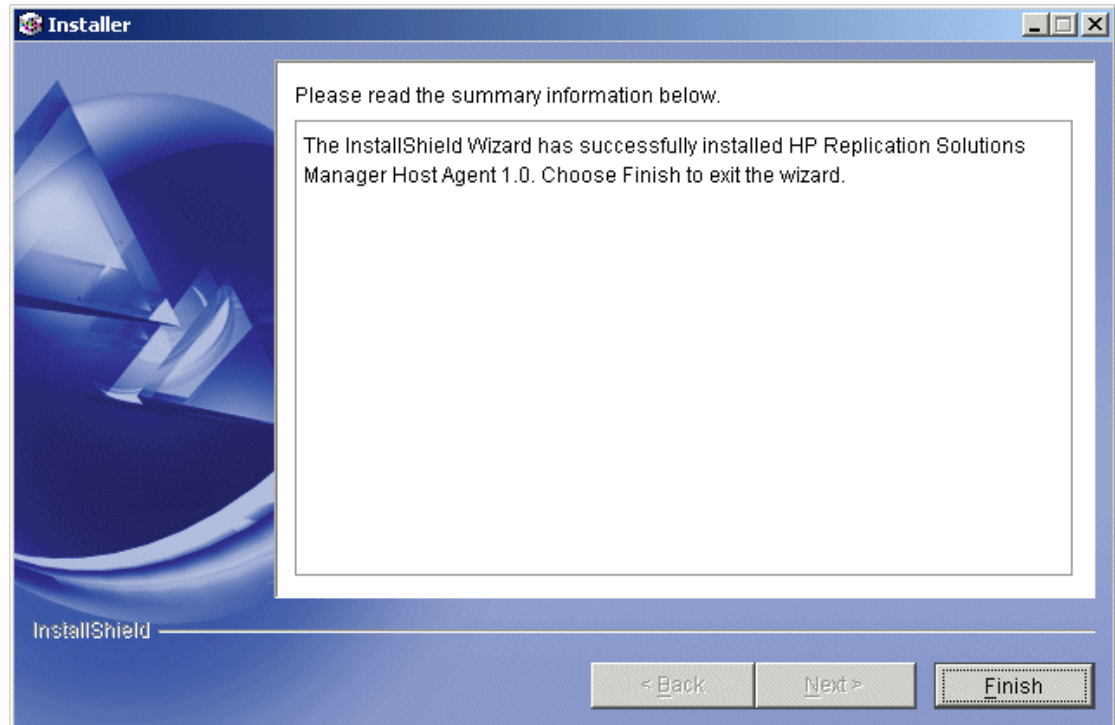
For UNIX hosts—[Figure 15](#) appears. Continue with [step 13](#).



**Figure 15: Enter host IP address (UNIX hosts only)**

13. Enter the host IP address.
14. Click **Next** to display the final page.

During reinstallations or updates, the program may request a restart to finalize the installation.



**Figure 16: Installation complete**

15. Click **Finish** to start replication services for this host and exit the installation.

See the following sections for other procedures:

- [“Checking for installed replication manager programs”](#) on page 44
- [“Configuring Windows systems with Multiple NICs”](#) on page 48
- [“Saving the replication manager configuration \(database\)”](#) on page 17
- [“Adding device files on Linux hosts”](#) on page 48

## Command-line procedure

1. If installing software on a host over a network:
  - For Windows hosts, use Terminal Services (see [“Using Terminal Services for remote installation”](#) on page 20) to access the host and log in.
  - For UNIX hosts, use Telnet to access the host and log in.
2. Open a command-line window.
3. Navigate to the replication manager host agent executable file for this host.

Executable file names:

- `setupwin32.exe` for Windows
- `setupHP11.bin` for HP-UX 11.11 (11i v1)
- `setupHP1A64.bin` for HP-UX 11.23PI (11i v2)
- `setupLinux.sh` for Linux
- `setupSolaris.bin` for Solaris

4. Enter the replication manager host agent executable file name to initiate the installation.

For example:

- Enter `setupSolaris.bin` to continue with the GUI installation at [step 4](#) on page 34.
- Enter `setupSolaris.bin -console` to continue with this procedure.

```
-----
Welcome to the InstallShield Wizard for HP Replication Solutions Manager
Host Agent 1.0.

The InstallShield Wizard will install HP Replication Solutions Manager
Host Agent 1.0 on your computer.

To continue, choose Next.

Press 1 for Next, 3 to Cancel or 4 to Redisplay [1]
```

5. Enter 1 to display the license agreement.

```
-----
Please read the following license agreement carefully.

HP StorageWorks Replication Solutions Manager License Agreement

Attention Notice
IMPORTANT: READ CAREFULLY BEFORE USING THIS PRODUCT.
.
.
.

Please choose from the following options:
[ ] 1 - I accept the terms of the license agreement.
[ ] 2 - I do not accept the terms of the license agreement.

To select an item enter its number, or 0 when you are finished: [0]
```

6. Read the license agreement and choose an option:
  - Enter 1 to accept the license agreement and continue the installation.
 

A confirmation message appears.
  - Enter 2 to reject the license agreement and follow the prompts to exit the installation.
7. Enter 0 to continue.

---

**Note:** When options are offered, enter "0" to exit the loop and continue the installation.

---

8. Enter 1 to continue.

```
-----
HP Replication Solutions Manager Host Agent 1.0 will be installed in the
following location:

C:\Program Files\Hewlett-Packard\sanmgr\bcca_agent

with the following features:

HP OpenView Storage Area Manager 3.2
HP Replication Solutions Manager Host Agent 1.0

for a total size:

29.6 MB

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

9. Enter 1 to continue.

```
Installing HP Replication Solutions Manager Host Agent 1.0. Please
wait...
```

```
|-----|-----|-----|-----|
0%          25%          50%          75%          100%
|||||
```

```
Creating uninstaller...
```

```
-----
Enter the IP address of the Management Server.
```

**Enter IP:**

10. Enter the IP address for the local server where the replication manager server is installed. The installation cannot continue until a valid IP address is entered.

**Tip:** If a wrong IP address is entered, add the correct IP address as an additional IP address. Then remove the wrong IP address from the access list using [“Adding remote access IP addresses”](#) on page 47.

For reinstallations, any new IP address entered here is added to the existing list.

11. Enter 1 to continue.

```
-----
Would you like to add an IP address for an additional Management Server?
```

```
[ ] 1 - Yes
[X] 2 - No
```

**To select an item enter its number, or 0 when you are finished: [0]**

Consider the following:

- Use 1 to add another management server IP address.

HP recommends entering the IP address for the remote site failover server. If this IP address is not currently known, add the address after completing the installation using [“Adding remote access IP addresses”](#) on page 47.

- Use 2 to continue the installation.

12. Enter 1 to add another server IP address.

Enter the IP address for the remote site failover server.

13. Enter 0 to continue.

14. Enter the IP address.

15. Enter 2 to stop entering more server IP addresses.

16. Enter 0 to continue.

17. Enter 1 to continue.

```
-----
Read the information below.
```

```
See the installation guide for adding additional IP addresses at a later
date.
```

```
Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

18. Enter 1 to continue.

For Windows hosts, continue with [step 21](#).

For UNIX hosts, the following screen appears. Continue with the following step.

```
-----
Enter the IP address for this system.
```

```
Enter IP:
```

19. Enter the IP address for this host.

20. Enter 1 to continue.

```
Starting the <HP Storage Area Manager service name> service. This may
take a few moments.
```

```
-----
The InstallShield Wizard has successfully installed HP Replication
Solutions Manager Host Agent 1.0. Choose Finish to exit the wizard.
```

```
Press 3 to Finish or 4 to Redisplay [3]
```

During reinstallations or updates, the program may request a restart. In this case, a restart is required to finalize the installation.

21. Enter 3 to end the installation.

See the following sections for other procedures:

- [“Checking for installed replication manager programs”](#) on page 44
- [“Configuring Windows systems with Multiple NICs”](#) on page 48
- [“Saving the replication manager configuration \(database\)”](#) on page 17
- [“Adding device files on Linux hosts”](#) on page 48

## Verifying installation

### Checking for installed replication manager programs

Verify the replication manager in the programs listed by the native installer.

- For Windows—Add/Remove Programs
  - For HP-UX—“swlist”
  - For Linux—“rpm”
  - For Sun Solaris—“pkginfo”
1. To verify installations from a remote location:
    - For Windows, use Terminal Services to access the server or host and log in.
    - For UNIX, use Telnet to access the host and log in.

Expected query results are as follows:

- Servers list **HP Replication Solutions Manager 1.0.**
- Windows hosts list **HP Replication Solutions Manager Host Agent 1.0.**
- UNIX hosts list package names HPSWRSMHA, HPOVSAMHA, and HPOVSAMJR.

On servers without HP Storage Area Manager, both the replication manager and the HP Storage Area Manager host agent should be listed.

On servers with HP Storage Area Manager, only the replication manager should be listed.


2. Does the expected replication manager software name appear in the query list?  
If yes, the software is installed. See [Starting the replication manager](#).  
If no, see “[Troubleshooting](#)” on page 65 and repeat the installation.

### Starting the replication manager

Methods of starting the application include:

- From an icon placed on the desktop during installation  
Use this method if you are logged on the management server directly or through Terminal Services. Do not browse to the replication manager from the management server.
- From an authorized client specified during installation or added later (see “[Adding remote access IP addresses](#),” page 47).

#### From the replication manager icon (application mode)

1. Log in to the management server. Use Terminal Services to log in remotely.
2. Double-click the replication manager icon  on the server desktop.  
A DOS window appears while the replication manager starts.

---

**Tip:** An alternative to double-clicking the replication manager icon is to double-click the file:  
C:\Program Files\Hewlett-Packard\sanmgr\commandview  
\server\browser\start\_gui.bat.

---

3. Log in to the replication manager.

Enter the user name (originally **admin**) and password (originally **nimda**).

**Note:** HP recommends changing the login password after accessing the replication manager for the first time. See [“Changing the replication manager password”](#) on page 47.

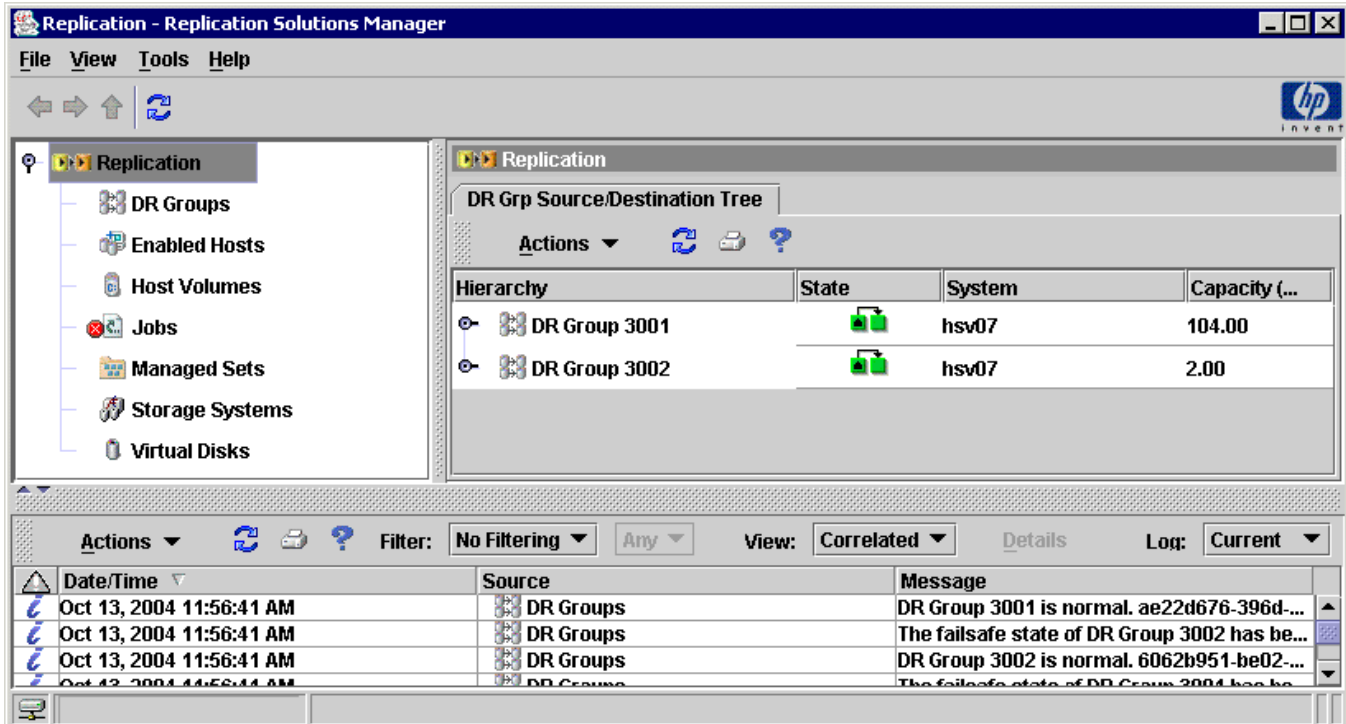


Figure 17: Replication manager interface example

## From an authorized client (applet mode)

An authorized client is any computer whose IP address is entered in the management server's access list. If you did not enter the IP address during installation, you can add it now. See [“Adding remote access IP addresses”](#) on page 47.

Using a browser on an authorized client, you can start the replication manager:

- By direct access
- Through the SMA software interface

Before using either method, verify that supported JRE and browser versions are installed. (See *HP StorageWorks EVA replication compatibility reference*.) Supported JREs and setup instructions are provided on the HP StorageWorks JREserver CD (in the product kit).

### Browsing directly to the replication manager

1. If you installed a new JRE, close all open browser sessions on the client.  
Closing and restarting the browser allows a new Java version to be recognized.
2. Open a Web browser and browse to the replication manager on the management server:

`http://<MyServerName_or_IP_Address>:4096`

3. Log in to the replication manager.

Enter the user name (originally **admin**) and password (originally **nimda**).

---

**Note:** HP recommends changing the login password after accessing the replication manager for the first time. See "[Changing the replication manager password](#)" on page 47.

---

### Browsing to the replication manager through the SMA

1. If you installed a new JRE, close all open browser sessions on the client.  
Closing and restarting the browser allows a new Java version to be recognized.
2. Open a Web browser and browse to the SMA:  
`//http:<MyServerName_or_IP_Address>`
3. Log in to the SMA. (See *HP OpenView Storage Management Appliance User Guide* for login information.)
4. Click **Settings**.
5. Click **Manage Tools**.  
Verify that the replication manager is installed. (The version is "unknown").
6. Click **Tools**.
7. Click **replication solutions manager**.
8. Log in to the replication manager.  
Enter the user name (originally **admin**) and password (originally **nimda**).

---

**Note:** HP recommends changing the login password after accessing the replication manager for the first time. See "[Changing the replication manager password](#)" on page 47.

---

## Viewing storage resources

1. Click **Storage Systems** in the replication manager navigation pane.
2. Review the Storage Systems pane to verify that expected storage resources are visible.  
All arrays discovered by the replication manager.

---

**Note:** The Storage Systems pane takes a while to update (under 30 minutes), especially in large configurations. See the *HP StorageWorks Continuous Access EVA administrator guide* for any problems with the display of arrays.

---

3. Review new features listed in *HP StorageWorks Continuous Access EVA administrator guide* as desired.
4. Review topics in the *HP Replication Solutions Manager online Help* and user guide as desired.
5. Verify the operation of the replication manager interface.

## Post-installation tasks

Perform the following tasks as needed after installing all replication manager software.

### Changing the replication manager password

HP recommends changing the replication manager administrator login password after accessing the replication manager interface for the first time. This procedure requires administrator-level access.

1. Access the replication manager server and log in as an administrator.
2. Start the replication manager.  
The replication manager interface appears.
3. Select **File > Change Password**.
4. Enter the old and new passwords.
5. Click **OK**.

### Adding remote access IP addresses

Use the following procedure to add remote access IP addresses after installing the replication manager server. Host names *cannot* be added to this list in place of IP addresses. This procedure requires administrator-level access.



**Caution:** If your SAN security is considered high, HP recommends adding an entry that allows all clients to access the server, such as \*. \*. \*. \*. \*. *Do not* add a general entry if you feel that your SAN is vulnerable to insecure access.

1. Access the replication manager server and log in as an administrator.
2. Navigate to the following file:
  - On management servers without HP Storage Area Manager:
 

```
C:\Program Files\Hewlett-Packard\sanmgr\hostagent\config\access.dat
```
  - On management servers with HP Storage Area Manager installed:
 

```
C:\Program Files\Hewlett-Packard\sanmgr\managementserver\config\authorizedClients.dat
```
3. Open the file using a text editor.
4. Review all IP addresses listed.



**Caution:** Both server and client IP address are listed. Modification or removal of a server IP address prevents communication between the associated replication manager server and host agents.

5. Modify or remove existing IP addresses or add new addresses.

---

**Note:** Host names *cannot* be added to this list in place of IP addresses.

---

## Installing the JREserver

See *HP StorageWorks JREserver installation guide* (AA-RVHQB-TE).

## Configuring Windows systems with Multiple NICs

Installing the replication manager host agent in a standalone system with multiple NICs or Windows cluster environment with multiple NICs might require changing the IP binding order. The IP binding order must list the NIC first on the network where the replication manager server resides.

Use the following procedure to configure each HP Storage Area Manager Host Agent:

1. Open **Control Panel**.
2. Double-click **Network and Dial-up Connections** (Windows 2000) or **Network Connections** (Windows 2003).
3. Select **Advanced > Advanced Settings**.
4. From the **Adapters and Binding** tab, is the NIC listed at the top for the network where the replication manager server resides?
  - Yes. Stop here because no further action is required.
  - No. Continue with [step a](#).
    - a. Move the NIC to the top.
    - b. Click **OK**.
    - c. Reboot the host.

## Adding device files on Linux hosts

The Linux host agent includes a utility script, `makesg.sh` that can be found in the install location:

```
.../sanmgr/bcca_agent/bin/
```

By default, Red Hat Linux uses `/dev/sg0` to `/dev/sg31`, allowing for 32 SCSI devices. SUSE Linux uses `/dev/sg0` to `/dev/sg15`, allowing for 16 SCSI devices. To correctly discover all LUNs presented to a host, as many `/dev/sg` device files are needed as there are SCSI devices seen by the host at any time.

If you observe missing information in the host-related views or experiencing failures during the `CreateHostVolume` step of jobs, the cause may be an insufficient number of `/dev/sg` device files.

1. Check the number of SCSI devices that the host sees by running the command:

```
cat /proc/scsi/scsi
```

from the command line on the host.

2. Count the number of attached devices.
3. Check the number of `/dev/sg` device files by running the command `ls /dev/sg*`

4. Count the number of `/dev/sg` files that end in numeric values. (The `/dev/sg` files that end in alphabetic characters from 'a' upwards are links to the numeric versions and are no longer used.)
5. If there are fewer `/dev/sg` files (from [step 4](#)) than the number of devices (from [step 2](#)), run `makesg.sh`, specifying the total number of devices.

The `makesg.sh` utility script creates missing `/dev/sg` device files up to the number specified. Those `/dev/sg` files in the range of 0-(num-1) that already exist are not modified. Those that do not exist will be created.

You should have one `/dev/sg` device file for each SCSI device, including directly attached SCSI devices, SAN arrays, and each LUN presented to the host.

## **Saving the replication manager configuration**

See “[Saving the replication manager configuration \(database\)](#)” on page 17.



# Removing HP Replication Solutions Manager

## 3

This chapter describes how to remove the replication manager from a server or host.



**Caution:** Always remove the replication manager server as follows to prevent unexpected replication manager behavior:

- Before removing the replication manager host agent, if installed on the server.
- Using the Add/Remove Programs feature.

Before initiating replication manager removal, allow all replication manager jobs to complete at both the local and remote sites.

## Removing replication manager server software

Replication manager server removal can be accomplished locally or using Terminal Services over a network.

**Important:** Replication manager host agents deployed from HP Storage Area Manager can be removed only by using HP Storage Area Manager. See “[Using HP Storage Area Manager to deploy host agents](#)” on page 59 for brief deployment and removal procedures.

### Removal requirements

- Allow all replication manager jobs to run to completion or stop them before initiating a removal; otherwise, data may be lost.
- Removing replication manager over a network without Terminal Services is not supported and creates removal errors.
- Always remove the replication manager server before removing the replication manager host agent that resides on the same server.

---

**Note:** Remove the replication manager from the SMA using only Windows Add/Remove Programs. The SMA software interface cannot be used to remove replication manager.

---

---

**Tip:** Convert a general purpose server to a host by removing only the replication manager server and leaving the host agent installed.

---

### Removal procedure

1. If removing software from a server over a network, use Terminal Services to access the server and log in.
2. Open **Control Panel**.
3. Double-click **Add/Remove Programs**.
4. Click **HP Replication Solutions Manager 1.0**.
5. Click **Change/Remove** to display a welcome window.



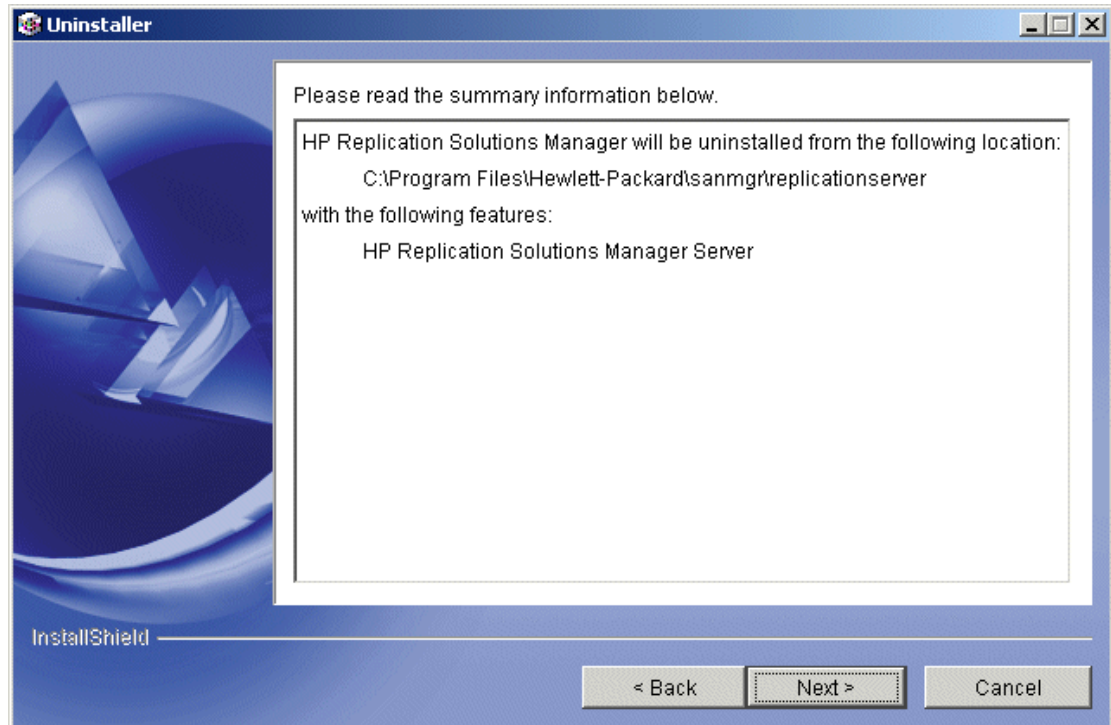
**Figure 18: Replication manager server removal introduction**

---

**Note:** Click **Cancel** at any time to exit the removal.

---

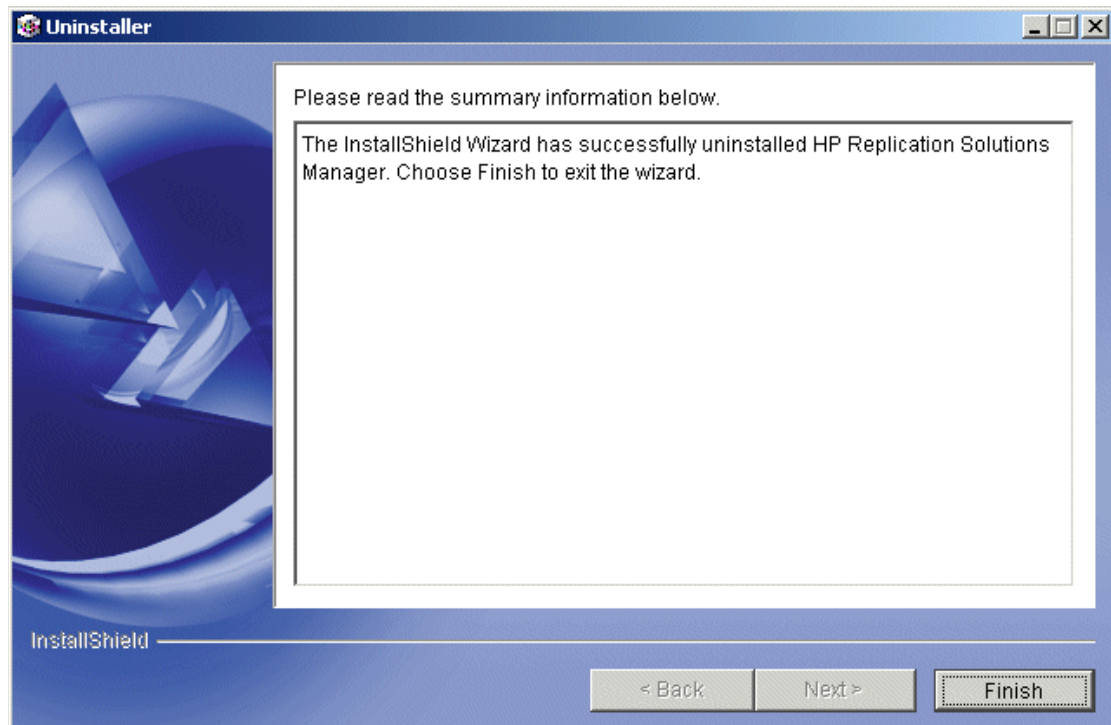
6. Click **Next** to display a summary page.



**Figure 19: Removal summary information**

7. Click **Next** to initiate the removal.

When the removal completes, a summary appears.



**Figure 20: Removal complete**

8. Click **Finish** to exit the removal.

## Manually removing replication manager host agent software

The following procedures describe how to remove a replication manager host agent from a server or host that was not deployed using HP Storage Area Manager.

Observe these requirements:

- Allow all replication manager jobs to run to completion or stop them before initiating a removal.
- For server configurations, always remove the replication manager server before removing the replication manager host agent. Replication manager aborts the removal if the replication manager server is detected on this same server.
- If HP Storage Area Manager deployed a replication manager host agent to a host, the only means of removing this replication manager host agent is by using HP Storage Area Manager.

Remove the replication manager host agent software using either the replication manager interface or command-line procedure applicable to each host.

### Windows hosts

1. If removing software from a host over a network, use Terminal Services to access the host and log in.
2. Access the server or host on which the removal is desired.
3. Open **Control Panel**.
4. Double-click **Add/Remove Programs**.
5. Click **HP Replication Solutions Manager Host Agent 1.0**.
6. Click **Change/Remove** to display a welcome window.

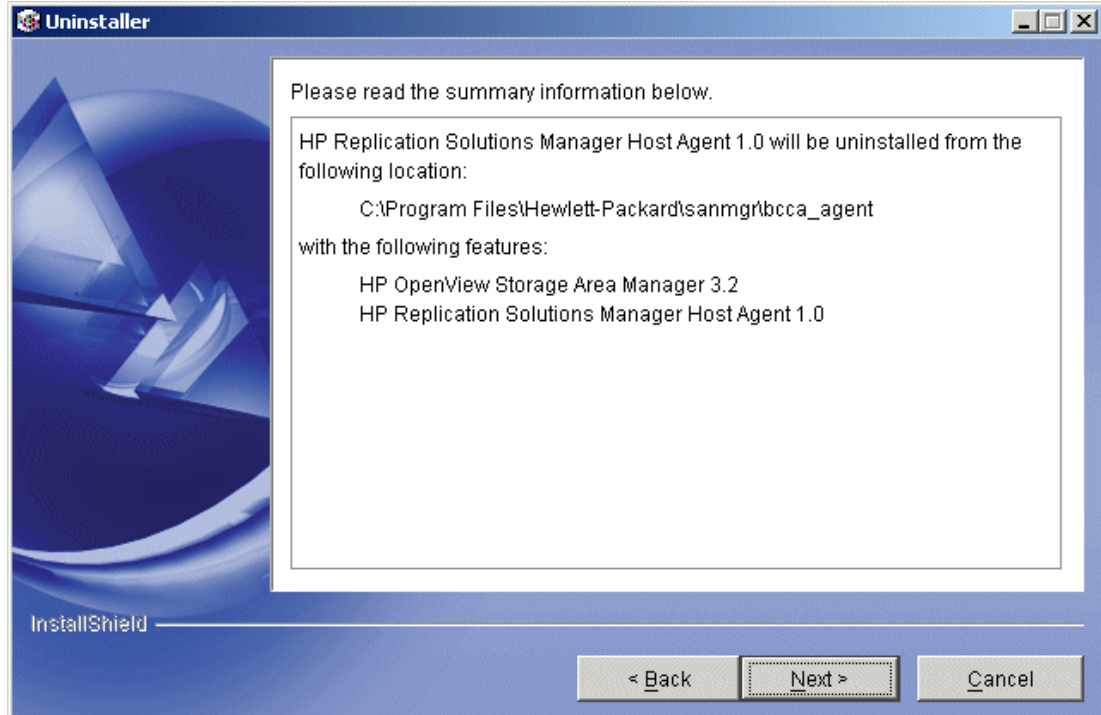


**Figure 21: Replication manager host agent removal introduction**

**Note:** Click **Cancel** at any time to exit the removal.

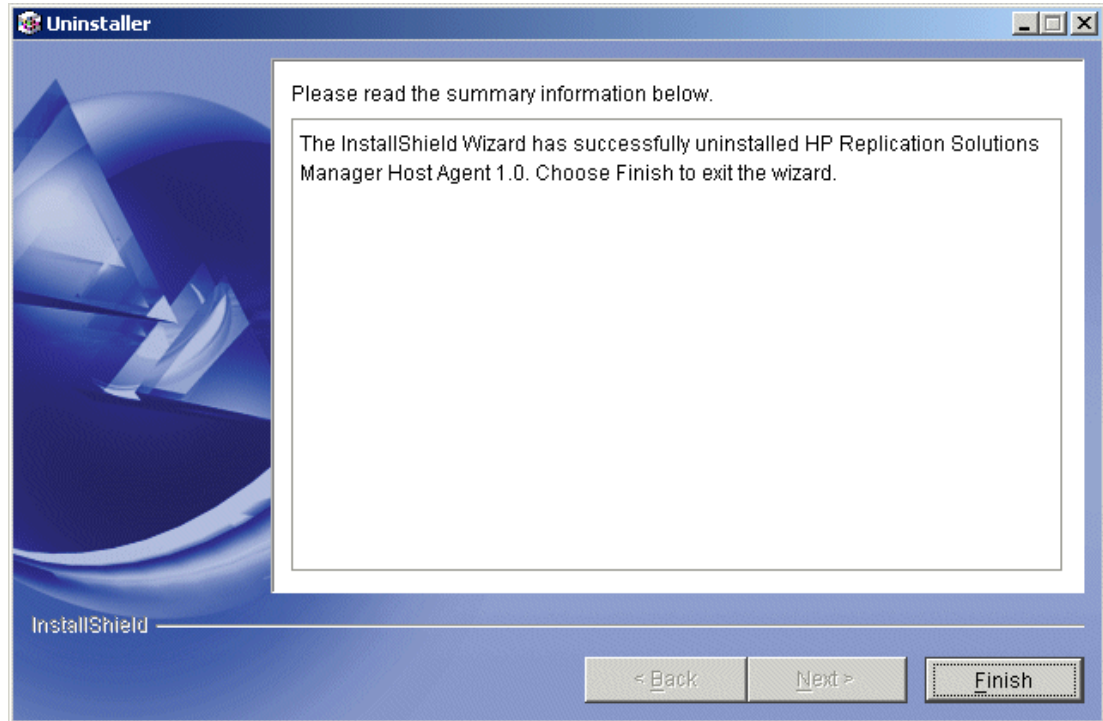
---

7. Click **Next**. A summary appears.



**Figure 22: Removal summary information**

8. Click **Next** to initiate the removal.  
When the removal completes, another summary appears.



**Figure 23: Removal complete**

9. Click **Finish** to exit the removal.

## UNIX hosts

### GUI method

1. If removing software from a host over a network, use Telnet to access the host and log in.
2. Open a command-line window.
3. Navigate to `/opt/sanmgr/bcca_agent/_uninst/`.
4. Enter `./uninstall.bin` file to initiate the removal.

A replication manager splash screen briefly appears followed by a welcome window (Figure 21). Continue with [step 7](#) on page 56.

### Command-line method

1. If removing software from a host over a network, use Telnet to access the host and log in.
2. Open a command-line window.
3. Navigate to `/opt/sanmgr/bcca_agent/_uninst/`.
4. Enter `./uninstall.bin -console` file to initiate the removal.

```
-----
Welcome to the InstallShield Wizard for HP Replication Solutions Manager
Host Agent 1.0.

The InstallShield Wizard will uninstall HP Replication Solutions Manager
Host Agent 1.0 from your computer.

To continue, choose Next.

Press 1 for Next, 3 to Cancel or 4 to Redisplay [1]
```

5. Enter 1 to continue the removal.

```
-----
HP Replication Solutions Manager Host Agent 1.0 will be uninstalled from
the following location:

/opt/sanmgr/bcca_agent

with the following features:

HP OpenView Storage Area Manager 3.2
HP Replication Solutions Manager Host Agent 1.0

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

6. Enter 1 to continue the removal.  
When the removal completes, a summary appears.

```
-----
The InstallShield Wizard has successfully uninstalled HP Replication
Solutions Manager Host Agent 1.0. Choose Finish to exit the wizard.

Press 3 to Finish or 4 to Redisplay [3]
```

7. Enter 3 to exit the removal.

# Using HP Storage Area Manager to deploy host agents

## 4

Only HP Storage Area Manager provides deployment capabilities for replication manager host agents. This chapter provides a fundamental procedure for deploying and removing replication manager host agents using HP Storage Area Manager. See *HP OpenView Storage Area Manager installation guide* (T2533-90001) for additional deployment and removal information.

---

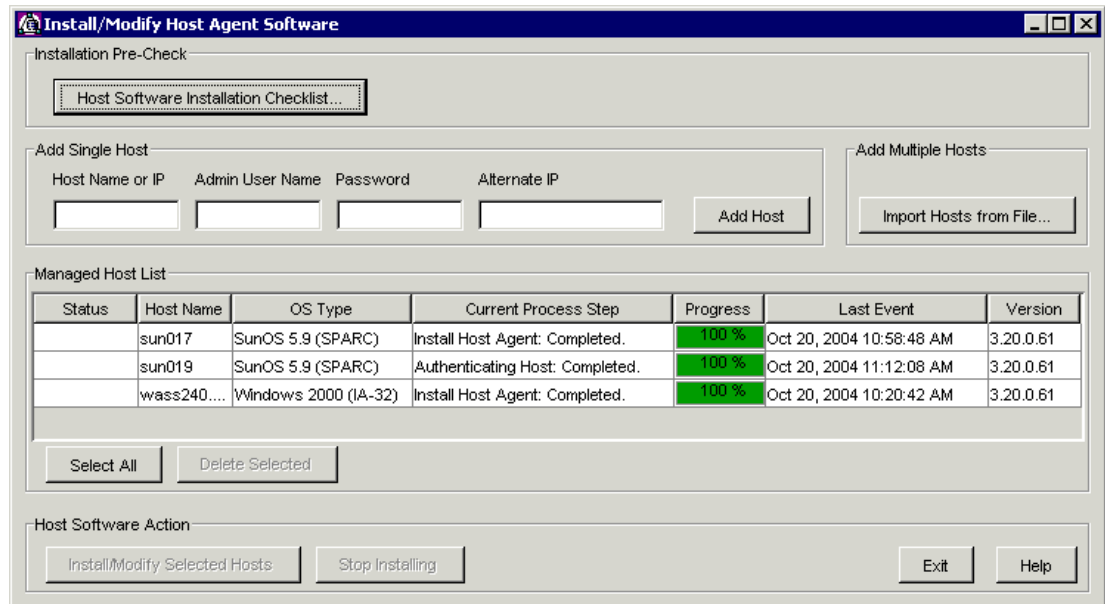
**Note:** A replication manager host agent installed on a host by HP Storage Area Manager deployment can be removed from the host only by HP Storage Area Manager.

---

## Deploying a replication manager host agent

After installing replication manager server on a management server that contains HP Storage Area Manager, deploy each replication manager host agent to specific hosts. Deploying a replication manager host agent package to a specific host requires that the HP Storage Area Manager Host Agent software be deployed to this host first. Use the following procedure to deploy the replication manager host agent:

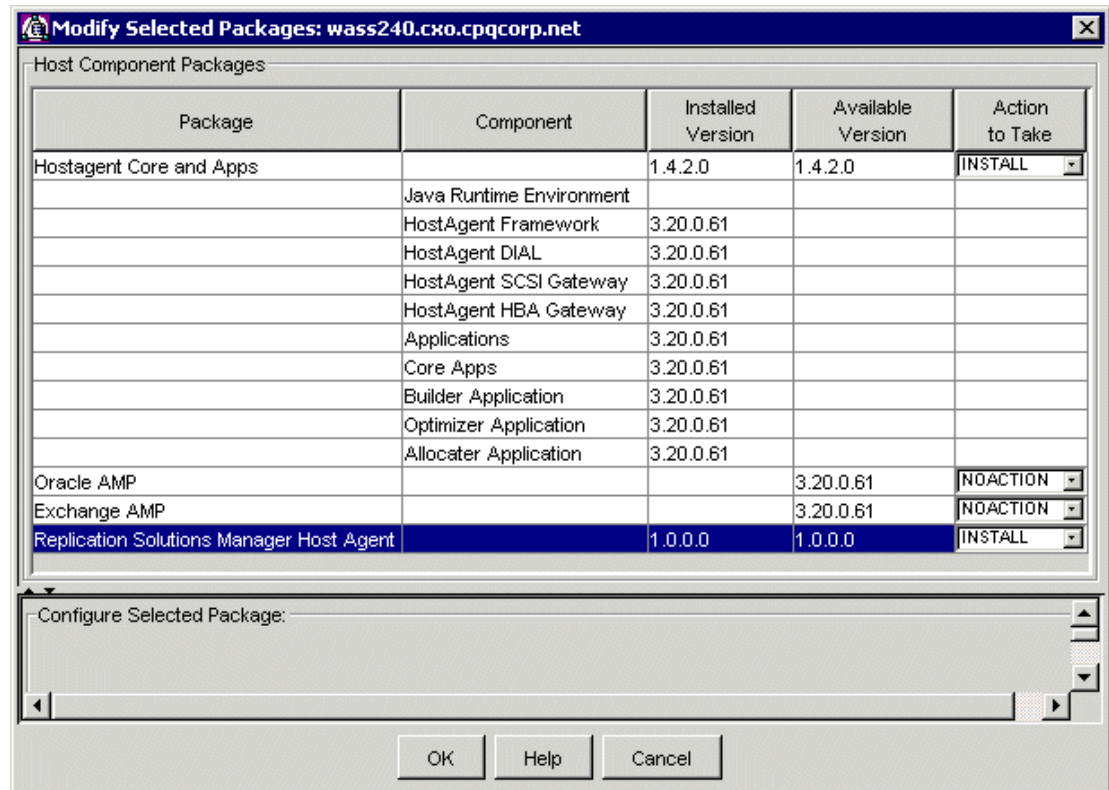
1. From the management server, open the HP Storage Area Manager interface.
2. Select **Tools > Manage Host Agent > Install/Modify Host Agent Software**.



**Figure 24: Installing or modifying HP Storage Area Manager packages**

3. Does the specific host appear in the Managed Host List?
  - Yes, continue with [step 8](#).
  - No, continue with the next step.
4. Under Add Single Host:
  - For Host Name or IP, enter the host IP address.
  - For Admin User Name and Password, enter administrator-level access information.
5. Click **Add Host**.
6. Under Managed Host List, select the new host entry.
7. Click **Install/Modify Selected Hosts**.
8. Right-click the specific host and select **Modify Host Packages Selection**.  
A window appears listing the packages currently available.

**Note:** The Host Agent Core and Apps package is required. You can only select **INSTALL** for this package.



**Figure 25: Deploying a replication manager host agent**

9. Under Action to Take:

- Select **INSTALL** to install the HP Storage Area Manager Host Agent software.
- Select **INSTALL** to install the replication manager host agent software.

**Note:** All replication manager hosts must receive both the HP Storage Area Manager Host Agent and replication manager host agent packages for replication manager to function.

10. Click **OK**.

The Install/Modify Host Agent Software window (see [Figure 24](#)) displays. Repeat this procedure for all replication manager host agent deployment installations as desired.

Also, see “[Configuring Windows systems with Multiple NICs](#)” on page 48 to complete the installation.

## Removing deployed replication manager host agents

HP recommends removing the replication manager host agent from the host before removing the HP Storage Area Manager Host Agent. The process for removing these host agents is identical, except for selecting the desired package before initiating the removal.

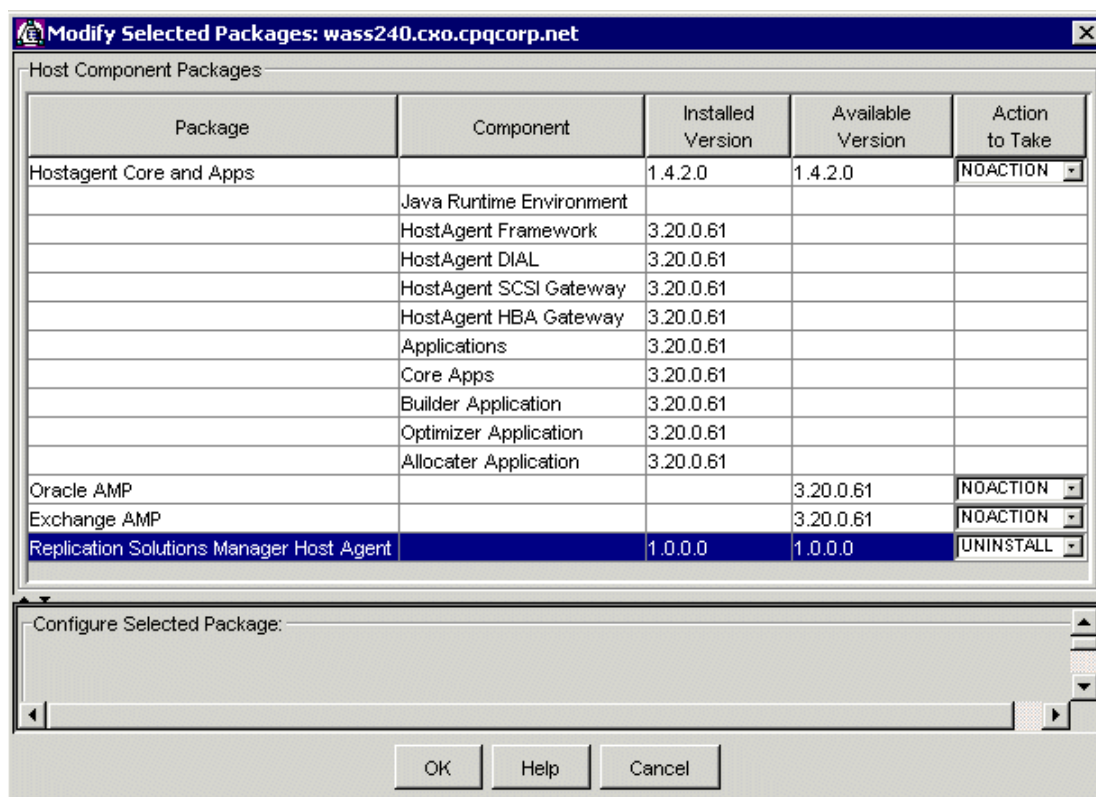
Remove a deployed replication manager host agent using the following procedure:

1. From the management server, open the HP Storage Area Manager interface.
2. Select **Tools > Manage Host Agent > Install/Modify Host Agent Software**.

Figure 24 appears.

3. Right-click the specific host and select **Modify Host Packages Selection**.

A window appears listing the packages currently available.



**Figure 26: Removing a deployed replication manager host agent**

4. Under Action to Take for Replication Solutions Manager Host Agent, select **UNINSTALL**.
5. Click **OK**.

Figure 24 displays when the removal completes. Repeat this procedure for all replication manager host agent deployment installations as desired.

Not all replication manager host agent subdirectories are removed. The files in the remaining subdirectories represent user data files or files you modified while using HP Storage Area Manager. Table 2 lists the subdirectories remaining after a successful removal of the replication manager host agent software.

---

**Note:** HP recommends never removing these directories if the host may be used to link back to previous jobs and logs and OV-SAM host agent is not installed.

---

**Table 2: Remaining Host Agent directories**

Windows hosts	UNIX hosts
C:\Program Files\Hewlett-Packard\sanmgr\hostagent	/opt/sanmgr/hostagent /etc/opt/sanmgr/hostagent /var/opt/sanmgr/hostagent



# Troubleshooting

## 5

This chapter describes known problems and suggested resolutions for troubleshooting the replication manager server installation.

---

**Issue:** Installation aborts with HP Command View EVA error message

**Description:** Replication manager server software does not install on a server if HP Command View EVA is not currently installed, running, or a supported version.

**Resolution:** Install a supported HP Command View EVA on the server and make sure the application is running, and then install the replication manager server software.

---

**Issue:** Replication manager installation error or warning message appears

**Description:** Sometimes a server service (“HP OpenView SAM HostAgent” or “HP OV-SAM ManagementServer”) does not start during installation and generates this message.

**Resolution:** Either manually start the service on the server using the Windows Control Panel services applet or reinstall the replication manager server software.

---

**Issue:** Replication manager interface does not appear after starting replication manager

**Description:** This error may occur because the replication manager server software was installed over the network drive while using Terminal Services. Failure to install from a local drive or CD-ROM while using Terminal Services can also cause subsequent reinstallation and removal problems.

**Resolution:** Remove replication manager from the server and then reinstall replication manager again using Terminal Services.

---

**Issue:** Browsing to the replication manager interface generates a JRE pop-up window

**Description:** This error may occur because the JRE on the browser client is not a supported version.

**Resolution:** See *HP StorageWorks JREserver installation guide* (AA-RVHQB-TE) to install a supported JRE version on the browser client. Also, use [“Adding remote access IP addresses”](#) on page 47 to make sure the browser client IP address is listed. If this address is not listed, manually add the address, restart the “HP OpenView SAM HostAgent” or “HP OV-SAM ManagementServer” service, and then browse to replication manager again.

---

*Issue:* **Browsing to replication manager generates a “connection refused” message**

*Description:* During replication manager installation, browser client IP addresses are requested for accessing replication manager remotely. If a browser client IP address is not in the IP address list, a “connection refused” message appears after login instead of the replication manager interface.

*Resolution:* Use “[Adding remote access IP addresses](#)” on page 47 to manually add the browser client IP address, restart the “HP OpenView SAM HostAgent” or “HP OV-SAM ManagementServer” service, and then browse to replication manager again.

---

*Issue:* **Starting the replication manager generates a “no login server” error message**

*Description:* This error may occur because of an invalid or unavailable server IP address.

*Resolution:* Verify the server IP address in your browser and in the access file on the management server.

## Glossary

This glossary defines terms that are used in this guide or are related to replication manager.

**array**

See [virtual array](#) and [storage system](#).

**client**

An intelligent device that requests services from other intelligent devices. In the context of HP StorageWorks Replication Manager, a client is a computer that is used to access the replication manager remotely using a supported browser.

**DR group**

Data replication group. A named group of virtual disks selected from one or more disk groups so that they replicate to the same destination, fail over together if a member virtual disk fails, and preserve write order within the group.

**enabled host**

A host that is equipped with a replication host agent.

**EVA**

Enterprise Virtual Array. An HP StorageWorks product that consists of one or more virtual arrays.

See also [virtual array](#).

**failover**

An operation that reverses replication direction so that the destination becomes the source and the source becomes the destination. Failovers can be planned or unplanned and can occur between DR groups, managed sets, fabrics or paths, and array controllers.

**general purpose server**

A server that runs customer applications such as file and print services. HP Command View EVA and HP Replication Solutions Manager can be used on a general purpose server in limited configurations.

**host**

A computer that runs user applications and uses (or potentially uses) one or more virtual disks that are created and presented by the array controller.

**job**

A repeatable custom script that automates replication tasks. A job can be simple (for example, create a DR group) or complex (for example, perform cascaded replication). Jobs can be run from the GUI, from the command line, from batch files, or by a scheduler.

**management server**

A server where HP StorageWorks Enterprise Virtual Array (EVA) management software is installed, including HP StorageWorks Command View EVA and HP StorageWorks Replication Solutions Manager, if used. A dedicated management server runs EVA management software exclusively. Other management servers are general purpose servers, HP ProLiant Storage Server (NAS) models, and the HP OpenView Storage Management Appliance. When there are multiple management servers in a SAN, one is active and all others are standby. The active management server actively manages the array, while the standby management server takes control of the array if there is a failure on the active management server. There is only one active management server at a time for any given management zone in a SAN.

**Storage Management Appliance**

HP OpenView Storage Management Appliance, an HP hardware-software product designed to run SAN management applications such as HP StorageWorks Command View EVA and HP StorageWorks Replication Solutions Manager.

**storage system**

Synonymous with virtual array. The HP Enterprise Virtual Array consists of one or more storage systems.

*See also* [virtual array](#).

**virtual array**

Synonymous with disk array and storage system, a group of disks in one or more disk enclosures combined with control software that presents disk storage capacity as one or more virtual disks. *See also* [virtual disk](#).

**virtual disk**

Variable disk capacity that is defined and managed by the array controller and presentable to hosts as a disk.

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